Efficiency and Effectiveness

Study of ICBAAR

Integrating Community-based Adaptation into
Afforestation and Reforestation (ICBAAR) Programme

Bangladesh Forest Department

Ministry of Environment, Forest & Climate Change

Efficiency and Effectiveness Study of ICBAAR Programme

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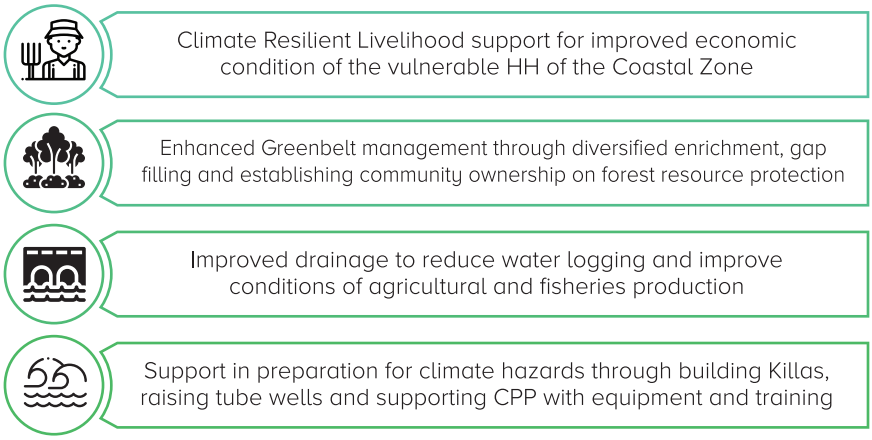
Executive Summary

Integrating Community-based Adaptation into Afforestation and Reforestation Programmes (ICBAAR) was strategically designed to reduce vulnerability of the climate effected population in the project sites. The project implemented interventions focusing enhanced access to government services aligned with country goals in the following areas:



To track the project contribution to the intended changes in the system and society, ICBAAR setup monitoring mechanisms and studies like collection and analysis of baseline condition data both for beneficiaries and sector of interest, post intervention follow up analysis and finally perception feedback study of Partners, Stakeholders and beneficiaries. The following study aims to capture the changes brought by ICBAAR interventions based on data collected and cross-referencing partner's data through the lenses of efficiency and effectiveness analysis. Most of the ICBAAR activities were jointly planned, implemented, and monitored by Government partners enabling transfer of technology and sharing of knowledge related to climate change adaptation in the remote coastal zones. The following document will discuss the efficiency of the project through analyzing implantation mechanisms, and time and cost management. This methodology of implementation was to ensure effective change by ensuring fulfilling access to enhanced government services for all. The following document also aims to capture the success of the ICBAAR strategy in achieving effective change by analyzing the following-

- Equity- Who received the interventions?? Were the interventions designed to capture vulnerable marginal population like- women, persons with disability, climate migrants of extreme poverty etc.
- Relevancy and Coherency- Are the project interventions meeting the actual need of the target beneficiary and sectors? Are the interventions coherent with Country objectives and goals?
- Satisfaction- Are the beneficiaries and partners satisfied with the changes in access and capacity?
- Sustainability- What are the mechanisms in place to sustain project achievements and learnings?

Abbreviations

2FVD	Fruit, fish, Vegetable, Duck
3F	Forest, Fruit, Fish
3FV	Forest, Fruit, Fish, Vegetable
ADD	Assistant Deputy Director
BCCRF	Bangladesh Climate Change Resilience Fund
BCCSAP	Bangladesh Climate Change Strategy and Action Plan
BCCTF	Bangladesh Climate Change Trust Fund
BDT	Bangladesh Taka
BWDB	Bangladesh Water Development Board
CBACC	Community Based Adaptation to Climate Change
CMC	Co-management Committee
COVID-19	Corona Virus Disease 2019
CPP	Cyclone Preparedness Programme
CRPAR	Climate Resilient Participatory Afforestation and Reforestation Project
DDM	Department of Disaster Management
DLS	Department of Livestock
DoAE	Department of Agricultural Extension
DoF	Department of Fisheries
DRR	Disaster Risk Reduction
EKN	Embassy of the Kingdom of Netherlands
FD	Forest Department
FRPG	Forest Resource Protection Group
GEF	Global Environment Facility
HH	Household
ICBAAR	Integrating Community-based Adaptation into Afforestation and Reforestation
KAP	Knowledge, Attitude & Practices
LDCF	Least Developed Countries Fund
MoEFCC	Ministry of Environment, Forest and Climate Change
MoU	Memorandum of Understanding
MoWR	Ministry of Water Resources
MTR	Mid Term Review
NACOM	Nature Conservation Management
NBS	Nature Based Solutions
NDC	Nationally Determined Contributions
NGO	Non-Government Organizations
OECD-DAC	Organization for Economic Co-operation and Development's Development Assistance Committee
PSC	Project Steering Committee
PSF	Pond Sand Filter
SADC	Swiss Agency for Development and Cooperation
SDG	Sustainable Development Goals
UNDP	United Nations Development Programme

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ICBAAR Project Background

'Integrating Community-based Adaptation into Afforestation and Reforestation (ICBA-AR)' is a four year long programme (July 2016 to June 2020, project time extended till March 2021) undertaken by the Ministry of Environment and Forests (MoEF) and Global Environment Facility (LDCF) (through UNDP Bangladesh) to strengthen coastal greenbelt management and to scale-up the achievements of the CBACC project. Between 2009 to 2015 MoEF of Bangladesh government implemented the Community Based Adaptation to Climate Change through Coastal Afforestation in Bangladesh (CBACC) Project with support from UNDP-Global Environment Facility (GEF), Swiss Agency for Development and Cooperation (SADC) and the Embassy of the Kingdom of the Netherlands (EKN). The CBACC project was aimed at reducing the vulnerability of coastal communities to the impacts of climate change through coastal afforestation and livelihood diversification.

ICBA-AR aims to reduce vulnerability of communities to the adverse impacts of climate change in the coastal zone through participatory planning, community-based management and diversification of afforestation and reforestation programmes. The programme is being implemented in eight coastal Upazilas of five most climate vulnerable coastal districts of the country- Bhola, Borguna, Noakhali, Patuakhali and Pirojpur districts.

Bangladesh is one of the most climate vulnerable countries in the world. The country is frequently subjected to cyclones, floods, and storm surges due to the adverse impact of climate change. Around 35 million people who are living in 19 coastal districts of the country are in the highest level of climate risks. 'Integrating Community-based Adaptation into Afforestation and Reforestation (ICBA-AR) Programmes in Bangladesh has been designed and implemented to reduce vulnerabilities and hazards of such extreme weather events .The objective of the programme is to reduce climate vulnerability of local communities through participatory planning, community-based management, integration of climate resilient livelihoods and diversification of species in afforestation and reforestation Programme.

Efficiency and Effectiveness of ICBAAR

Efficiency

Efficiency of ICBAAR in producing results in this document will be analyzed based on the following:

1. Results achieved by the project in comparison to project Objectives and Outcome
2. Duration of the project intervention (if the results were achieved within allocated time)
3. Methodologies followed in beneficiary selection, raw materials purchasing (like use of low-cost local materials whilst maintaining quality)

Effectiveness

For understanding the effectiveness of the ICBAAR interventions, we will look into the following

1. Benefits to the beneficiary, system, partners and the community
2. Equity and contribution to government goals
3. Satisfaction of partners and beneficiaries also in context of relevance

Efficiency: ICBAAR Objective and Outcome vs Achievements

ICBAAR has achieved all its intended targets as per project documents despite the delay in initiation. However, the feasibility of the second outcome of forest benefit sharing was reviewed and revised during MTR review. The project has also achieved the alternative targets provided in the PSC meetings based on MTR findings. Based on the following one can say that the project was efficient in delivering results.

Project Objective

Reduce vulnerability of communities to the adverse impacts of climate change through participative design, community-based management and diversification of afforestation and reforestation programmes.

INDICATOR 1: Differential survival rate of new coastal mangrove plantations with and without associated integrated livelihood diversification support

Target in the End of Project Period: The survival rate of mangrove forests linked to livelihood support in CRPAR project afforestation sites is at least 15% higher than in afforestation sites without linked livelihood support

Update: According to the "Garden survey and monitoring report of the Mangrove plantation 2018-2019 by the Forest department of Bangladesh, 98.73% of the plantation were fresh and strong, 1.27% suffered damage. (2019-2020 report is most likely be out in December 2020). In addition, the report states survival of diversified multi-species mangrove plantation in the ICBAAR sites.

Approaches undertaken to achieve this-

Enrichment Plantation: Plantation of diversified species of Mangrove to enrich the mangrove diversification and thus increasing the survival chances (similar to that of Sundarbans). Since each type of mangrove has different seasonal characteristics that contribute to strengthening the greenbelt throughout the year. Project introduced 12 different saline tolerant mangroves, prior to project interventions these greenbelts had (2/3 varieties). 5,72,000 mangrove seedlings of 12 robust, saline-tolerant species have been planted in 650 ha degraded mangroves. The seedlings were raised in 10 different forest ranges in four working districts (Noakhali, Bhola, Patuakhali and Barguna) of ICBAAR. Project also identified 350 ha. for gap filling and strengthening of the greenbelts.

Climate Resilient Livelihood: 8645 HH received climate resilient livelihood support through different government partners. 48% HH of the beneficiaries were dependent on the nearby mangrove forest for Wood and Fuel, 48% HH Fishing from Mangrove or Nearby River, 39% HH worked in Fish/ Shrimp Farm in Mangrove and 80% HH for Protection from Cyclone/ Tidal Surge. These HH were provided alternatives climate resilient livelihood options to reduce dependency.

INDICATOR 2: % of community members (gender disaggregated) who feel 'ownership' of coastal mangrove forest resources measured through change in score obtained through simplified adaptation of Knowledge, Attitude & Practices (KAP) survey method

Target in the End of Project Period: 30% improvement in the sense of ownership towards coastal mangrove resources

Update: Co-management Committees (CMC) in each Upazilas of project sites and 20 Forest Resources Protection Groups (FRPG) formed are now active in the sense of ownership towards conservation of coastal mangrove resources. For example- CMC has undertaken initiative to build climate resilient cluster villages where forest resources protection is one of the prime objectives. FRPGs are also jointly working with Forest Department in forest resource protection like guarding certain areas as per Forest Department guidance. Co-management Committees actively advocates forest resource management in their regular activities. Every livelihood beneficiary is sensitized on the matter as an intricate part of the adaptation training process.

Project Outcome

OUTCOME 1: Vulnerability of communities in new afforestation and reforestation sites reduced through diversified livelihood options and more effective greenbelts.

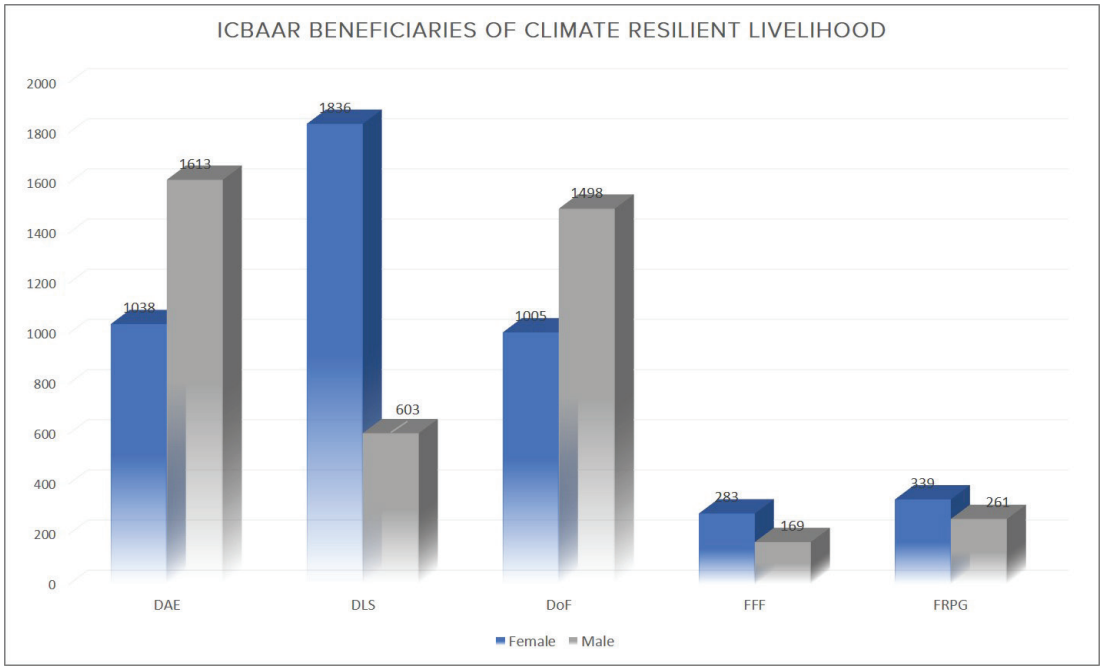
INDICATOR: % of targeted households that have adopted resilient livelihoods under existing and projected climate change

Target in the End of Project Period: At least 70% of 10,500 target households living adjacent to CRPAR coastal afforestation / reforestation sites have adopted resilient livelihoods introduced in the project

Update: Achieved 100%

Out of planned 8,600 HHs (revised from 10,500 as per MTR and PSC recommendation) 8,645 selected climate vulnerable HHs in 5 project sites (districts) living adjacent to CRPAR coastal afforestation / reforestation sites have adopted resilient livelihoods (related to climate resilient agriculture, fisheries and livestock options) introduced in the project. ICBAAR project has reached 8645 (4501 female, 4144 male) vulnerable Households through variety of climate resilient livelihood Interventions to provide them with further alternatives and as a result reduce vulnerability.

52% of the project livelihood beneficiaries are female. Interventions were designed to provide innovative livelihood options suitable for women, including the floating garden, vegetables production in sacks, Khaki Campbell duck farming, 2FVD model of vegetable production and fisheries, the hydroponic fodder grass production etc. which requires less space and can be grown in the backyard. Steady livelihood options support economic empowerment of these very poor women in the remotest islands.



Follow up data of the beneficiaries is in the later Chapters.

OUTCOME 2: Strengthened community involvement in, and ownership of, forestry-based adaptation and climate risk reduction programmes

INDICATOR 1: Regulatory reform and fiscal incentive structures introduced that incorporate climate change risk management

INDICATOR 2: Number of Forest Resource Management Group (FRMG) members (gender-disaggregated) who gain access to coastal forest resources underpinned by a formal benefit-sharing agreement

Update: This target had been removed based on MTR recommendation and PSC meeting decision. Instead of this mechanism, as per MTR recommendation and PSC meeting decision, Micro Capital Grant (MCG) is provided to all 20 FRPGs. This fund is for the sustainability of FRPG livelihood interventions. The nature of this fund is revolving method where the FRPG beneficiary returns the allocated fund after using it for livelihood interventions. All the members can take out these funds as per need, but they have to return it to ensure longevity of the fund usage. ICBAAR ensured guidelines for fund usage and strict monitoring and follow up through CMC. MCG revolving fund collection is currently approximately US$40,000 in 18 FRPG. A formal MoU regarding FRPG's roles in forest conservation with Forest Department is now also under process.

20 FRPG of 600 members (261 M, 339 F) have been formed and trained. As direct

benefits from the coastal forest under a formal benefit-sharing scheme is not realistic which is mentioned above, the FRPG members has been made responsible for the protection of coastal forest providing MCG to each FRPG.

Till date, FRPG members saving is up to approximately US$ 6000. MCG revolving fund collection- approximately US$40,000 in 18 FRPG. (2 are currently under process) for livelihood interventions and members can avail these funds, as needed. Guidelines for fund usage has been prepared and strict monitoring and follow-up are carried out by the CMC

A formal MoU regarding FRPG's roles in forest conservation with Forest Department is under process and is expected to be signed by October 2020. The MoU clarifies, amongst others, the roles and responsibilities of the FRPG and the Forest Department in forest protection, maintenance and management; the role of the CMC as a monitoring body; prioritizing the FRPG members in forest department nursery raising and other labor-based work; allocation of safe areas for fishing inside forest etc.

OUTCOME 3: Communal livelihood assets in afforestation and reforestation sites are protected from extreme climate events through effective early warning and preparedness planning.

INDICATOR 1: The number of CPP volunteers trained for climate risks, disaster preparedness, and the benefits of coastal forests for climate risk mitigation

Target in the End of Project Period: By the end of the project, at least 6,000 volunteers (representing 60% of the existing CPP network in the project target sites) are trained on additional elements on climate change and disaster preparedness

Update: 6,000 CPP volunteers have been trained by the Department of Disaster Management as per MoU signed between DDM and ICBARR following a specially developed training module emphasizing the roles of CPPs during disaster and also regarding roles of coastal forests against cyclone and storm surges as per agreement signed with Department of Disaster management. CPP volunteers played significant role in 2020 cyclone season to secure lives and livelihoods. Special COVID 19 precautionary support was provided for cyclone centers in the project site during Cyclone Amphan by the CPP volunteers

Details in later chapters

INDICATOR 2: The number and types of communal livelihood assets safeguarded from the potential impacts of extreme and localized climate events

Target in the End of Project Period:

I. By the end of the project, the following investments are complete: At least 25 km of embankment is equipped with sufficient drainage channel

II. At least 10 killas are constructed providing additional safe havens for livestock

III. At least 150 sets of freshwater supply infrastructure are safeguarded from floods

Update:

I. 20 sluice gates repaired resulting in improvement of around 50 km along the embankment and drainage facilities exceeding the original target of 25 kms of embankment. This intervention led to better water availability and improved agricultural production of the vulnerable coastal communities (success stories are highlighted in section H). In addition, project has reformed, and partially revived sluice-gate management committee supervised by Bangladesh Water Development Board. Additional 2.9 km of Canal-re-excavation conducted to improve drainage facilities. Approximately 2 Lac coastal climate vulnerable population will benefit from the improved drainage facilities.

II. Due to severe unavailability of suitable lands, as per MTR recommendation and PSC decision, the target was revised to 6, as the project was able to identify 6 suitable sites for Killa of which 4 are completed. Two killas under construction are delayed due to COVID-19 and rainy season, but will be completed before project closure, as planned.

III. All 150 sets of raised platforms of tube wells providing freshwater have been established in suitable sites benefitting over 5000 households. Each tube well is used by 30-35HH. These raised tube wells are at times the only reliable water source during flood season since all other water sources are inundated by saline water during flood and thus not drinkable.

Efficiency: Climate Resilient Livelihood

Methodology: Partnerships

The strongest attribute of ICBAAR interventions is that it has been implemented through the government partners fully utilizing their expertise in the relevant departments, Department of Agricultural Extension, Department of Fisheries, Department of Live stocks, Bangladesh Water board and Forest Department. Joint monitoring and supervision of the interventions have established ownership and knowledge management within the departments ensuring sustainability of project interventions. ICBAAR project interventions are not only widely accepted by the Government of Bangladesh; It has received international recognition in multiple occasions.

Methodologies: Beneficiary Selection for Livelihood Interventions

- **Consultation meeting in the locality:** Beneficiary selection jointly with government partners is initiated through a consultation meeting in the project sites, where relevant departments, local representatives and potential beneficiaries are present. The project objectives and demand of the target groups are interchanged during this meeting.
- Data collection and scoring: Beneficiary is selected as per following criterion. All the potential beneficiaries are scored under each of the criterion for final selection.
    - Demographic/social
    - Household income
    - Household expenditures
    - Homestead land
    - Housing
    - Access to drinking water
    - Sanitary facilities
    - Access to credit/NGO members
    - Forest dependency
    - Asset diversity
    - Production diversity
    - Sales diversity
    - Food security

- **Approval of relevant departments and in the CMC monthly meeting**

Methodologies: Trainings and Raw materials

Providing training and raw materials are dependent on the season, after beneficiary selection the trainings are arranged as per suitability of interventions. The training arrange process requires prior notification for beneficiaries and coordination with the relevant government partners, who are the resource persons. Raw materials are usually of low cost and available in the local markets for ease of adaptability. Raw materials that are unavailable in local markets are purchased through government partners and their stores. This stage of the process is also done in coordination with government partners, therefore for mixed interventions multiple partner coordination is maintained.

Method	Land/Amount/ Size	Preparation Cost (BDT) (unit)	Cost includes
Sorjone culture	10 decimals lands	25,000.00	All including excavation work of ditch and dykes
Cage culture	20 ft X 10 ft structure	35,000.00	All including its initial investment (fingerling and food)
3FV model	252 ft long and 59 ft width dyke and 182 ft long and 8.5 ft depth ditch	79,000.00	All included
2FVD	18 feet x 16 ft structure	45,000.00	All including initial investment (fish, duck, vegetable seeds/seedlings, fruit seedlings, labor and other)
Floating garden		14,000.00	All including seeds and fertilizer
3 Layer Vegetable	10 decimal lands	6,000.00	All including bamboo, net, seeds, fertilizer
T-Amon	33 decimal land	5,000.00	All including seeds, fertilizer and other
Hydroponic		5,000.00	All including shelves, tray, seeds, sac
Biofloc		88,000.00	All including cages, fingerling, and feed
Duck	10 ducks	10,000.00	All including food and house
Crab fattening		15,000.00	All including crab fingerlings, feed, net
Stair system vegetable cultivation/multilayer vegetable cultivation	½ to 1 decimal of lands stair	14,500.00	All including bamboo, rope, net seed, fertilizer
Vermi compost production		8,000.00	All including warm, tin shed, chari, cow dung, swipe

Time Management:

The beneficiary selection process takes about 3- 4 weeks per government partner. Therefore, it takes a full quarter to complete the beneficiary selection process with all relevant parties and the 3 main departments. Training arrangements usually takes 2 weeks including notification to beneficiaries and all other necessary coordination. Procurement of Raw materials are conducted as per UNDP rules.

Overall Time management of delivery of intended results were on par each year with the target. (overachieved) However in 2020, the final year of project implementation, was monumentally difficult to implement project interventions as planned. Due to the countrywide lockdown, seasonal nature of almost all the activities, remoteness of the working site (Islands), and Government officials of the implementing partner agencies (like Upazila Nirbahi Officer, Upazila Agriculture Officer, Upazila Livestock Officer, Upazila Fisheries Officer, Cyclone Preparedness Officer, Water Development Officials) occupied with crisis management, project extension till March 2021 was granted .

Baseline Condition

ICBAAR has already provided climate resilient livelihood support to 8645 (4501 females, 4144 male) out of the total target of 8,600 Households (HHs). Project has provided agricultural, fisheries and livestock support with special focus to climate adherence aspects like salt tolerance, heavy wind tolerance, higher number of annual yields etc.

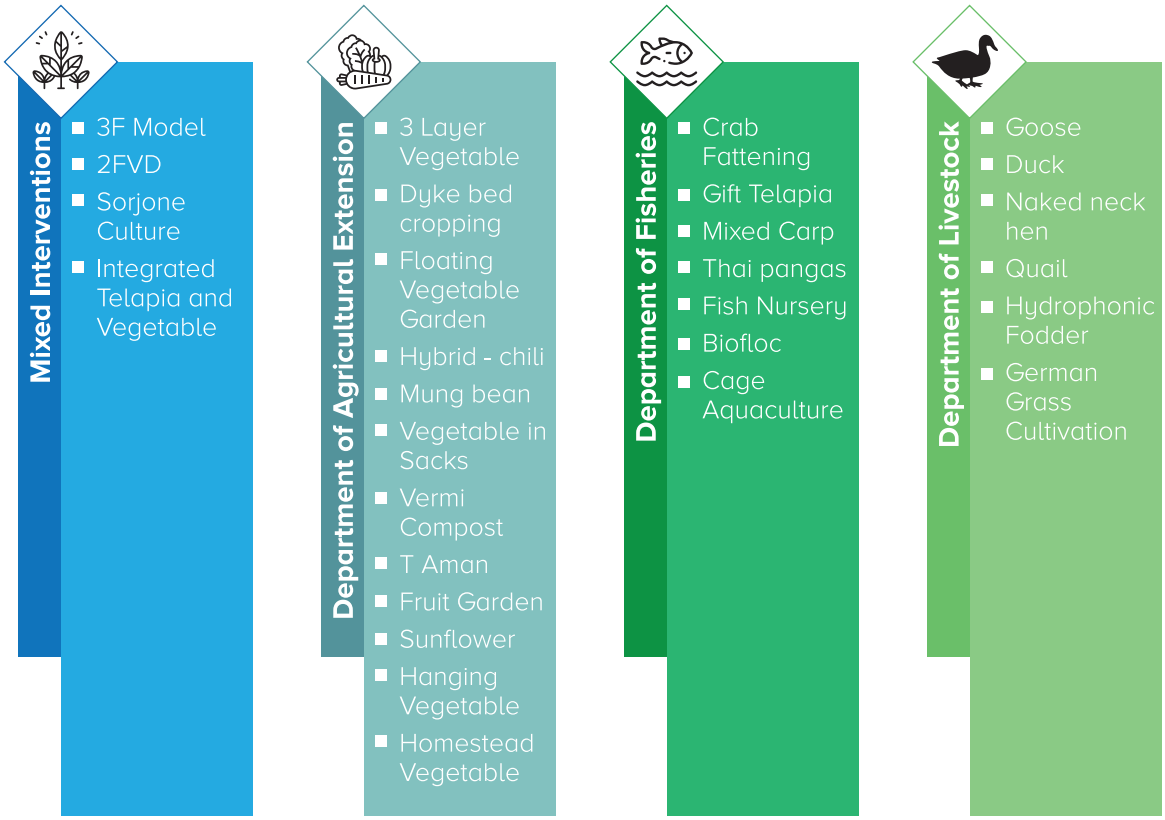
ICBAAR project has been introducing innovative and climate resilient livelihood options for the coastal population over the years as promised. These climate resilient innovations emphasizing nature-based solutions address vulnerability and diverts dependency of the coastal people on the greenbelt. Innovative livelihood options like Sorjone culture, Cage culture, 3FV model, 2FVD model, Fish culture through bio flock etc., have enabled the vulnerable beneficiaries to ensure year-round benefits. (in some case one-time inputs are also able to bring benefits for 2-5 years).

The strongest attribute of these climate resilient livelihood interventions is that it has been implemented through the government partners fully utilizing their expertise in the relevant departments, - Department of Agricultural Extension, Department of Fisheries, Department of Livestock and Forest Department. Joint monitoring and supervision of the interventions have established ownership and knowledge management within the departments ensuring sustainability of project interventions. ICBAAR project interventions are not only widely accepted by the Government of Bangladesh; It has received an international recognition in multiple occasions.

Partnerships for Climate Resilient Livelihood Interventions:	Department of Agricultural Extension
	Department of Fisheries
	Department of Livestock
	Co-Management Committee (CMC)
	Partner NGO: Nature Conservation Management (NACOM)
Project Locations:	5 Coastal Districts of Bangladesh: Barguna, Bhola, Noakhali, Patuakhali, Pirojpur 8 Upazilas: Patharghata, Charfassion, Monpura, Tazumuddin, Hatiya, Galachipa, Rangabali, Bhandaria.

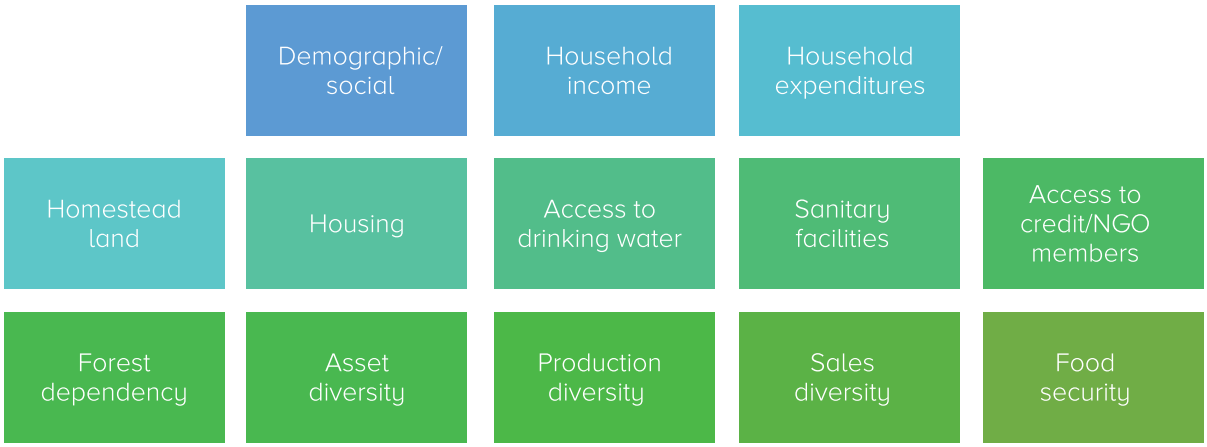
Project addresses existing barriers in relation to lack of livelihood diversification in the coastal areas and therefore dependency on the forests and other natural resources which in terms also increases the vulnerability during climate hazards. Beneficiary selection process for climate resilient livelihood support it is therefore a crucial step to the process.

The table below are different ICBAAR climate Livelihood Interventions jointly implemented with relevant Government Department-



Beneficiary selection criteria

Following criteria were taken under condition to ensure effective selection of beneficiaries for climate resilient livelihood support in the coastal regions.



Village Selection

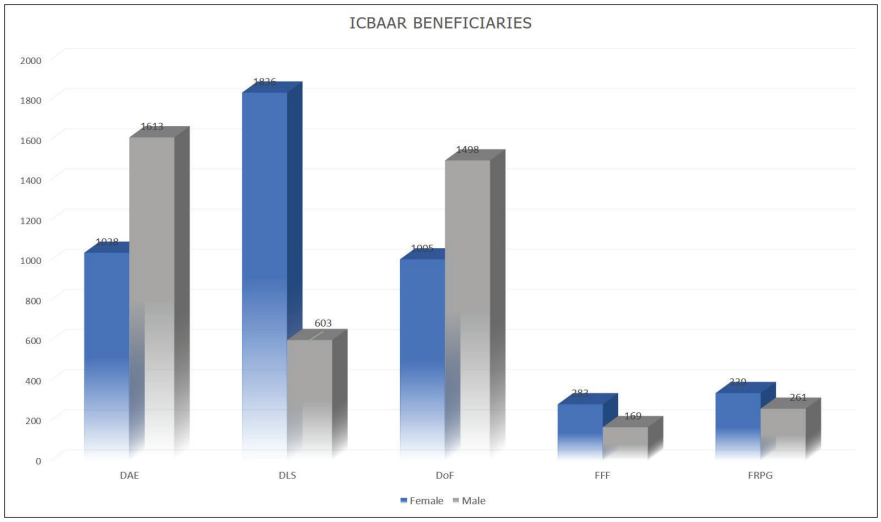
- Dependence on existing forests
- Proximity to proposed afforestation/ reforestation site
- Level of current and potential impacts of climate change
- Level of poverty
- Land suitability for crop farming
- Risk of damage due to salinity and/or coastal flooding

Beneficiary Reached

ICBAAR project sites are by nature in the remotest parts of coastal Bangladesh, inhabited by an extremely vulnerable population, with their livelihood dependent on the climate conditions and is also restrained by climate change. ICBAAR project has reached **8645 (4501 female, 4144 male)** such Households through variety of climate resilient livelihood Interventions to provide them with further alternatives and as a result reduce vulnerability.

Gender focused project intervention and representation (all project watchers are female) is the core strategy undertaken in the climate resilient livelihood supports of the project. **52%** of the project livelihood beneficiaries are female. Interventions were designed to provide innovative livelihood options suitable for women, including the floating garden, vegetables production in sacks, Khaki Campbell duck farming, 2FVD model of vegetable production and fisheries, the hydroponic fodder grass production etc. which requires less space and can be grown in the backyard. Steady livelihood options support economic empowerment of these very poor women in the remotest islands.

56.5% FRPG members are also female, and thus a contributor and beneficiary to FRPG savings, on top of the economic empowerment FRPG membership allows local women to raise their voice in natural resource management and governance.

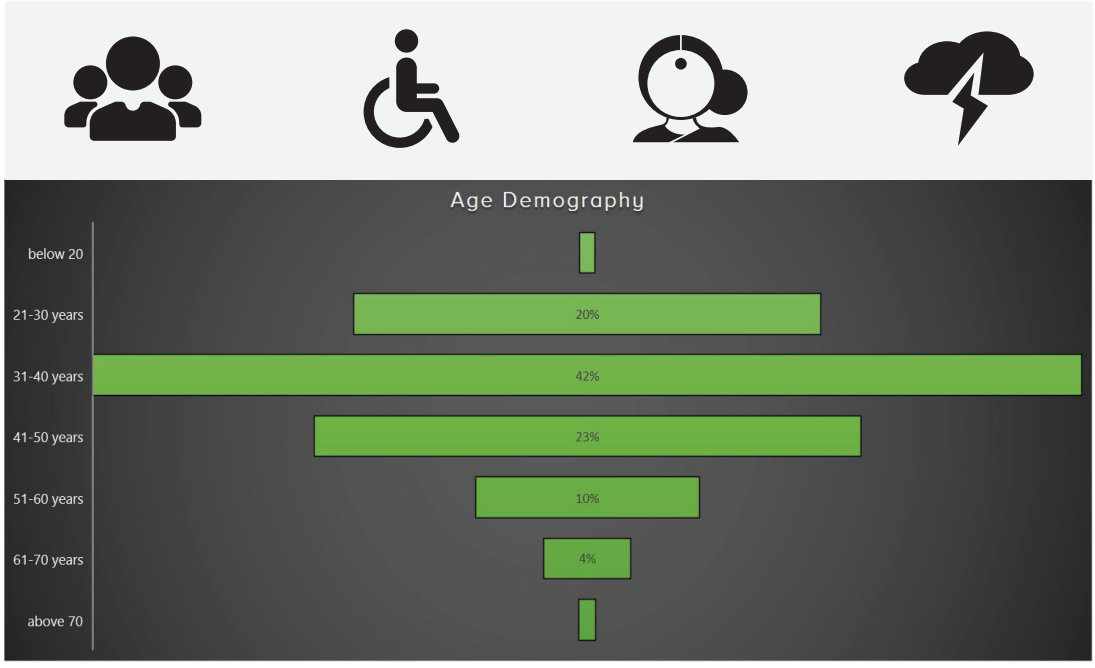


Beneficiary Baseline Condition

ICBAAR collected and analyzed following information about the beneficiaries during selection process to understand the baseline conditions and to ensure above criterions.

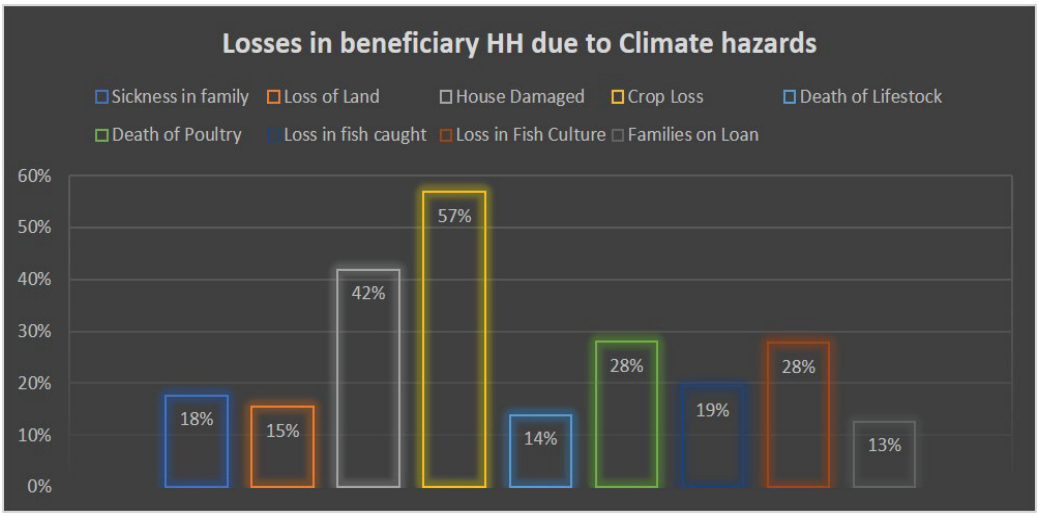
HH Demography

The household reached have an average size of **4.7** members with an average earning member of 1.15; meaning one person is responsible for 4/5 family members in the most adverse condition. **232 (3%)** of the household has at least one member with physical disabilities. **239 (3%)** Households amongst them are female headed.



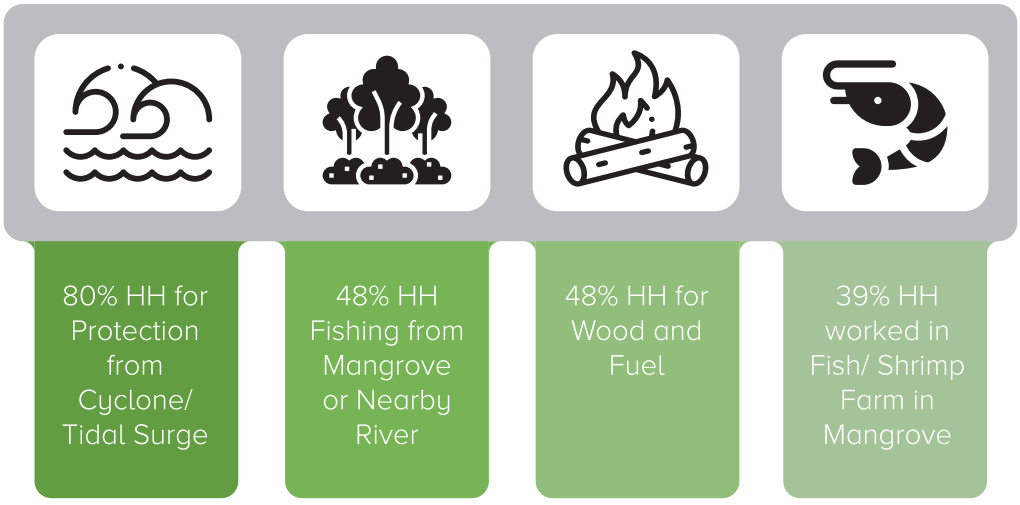
Effects of Climate change in Beneficiary Households

266 (3%) households are migrant families due to climate change. **381 (4%)** of the Household heads had to change their occupation due to climate change over the last 10 years.



Forest Dependency during baseline

Due to proximity of the villages selected for ICBAAR interventions, many of ICBAAR beneficiaries did have a daily dependency on the mangrove forests and the protected land prior during baseline. Villages little further away from the forests have lesser dependency. One of the long-term goals of Climate resilient ICBAAR interventions is to reduce vulnerability of the target groups so that the communities have reduced dependency on the Forest. ICBAAR addresses this through introducing alternatives that have multi yield yearlong.



Beneficiary HH Income and Expenditure

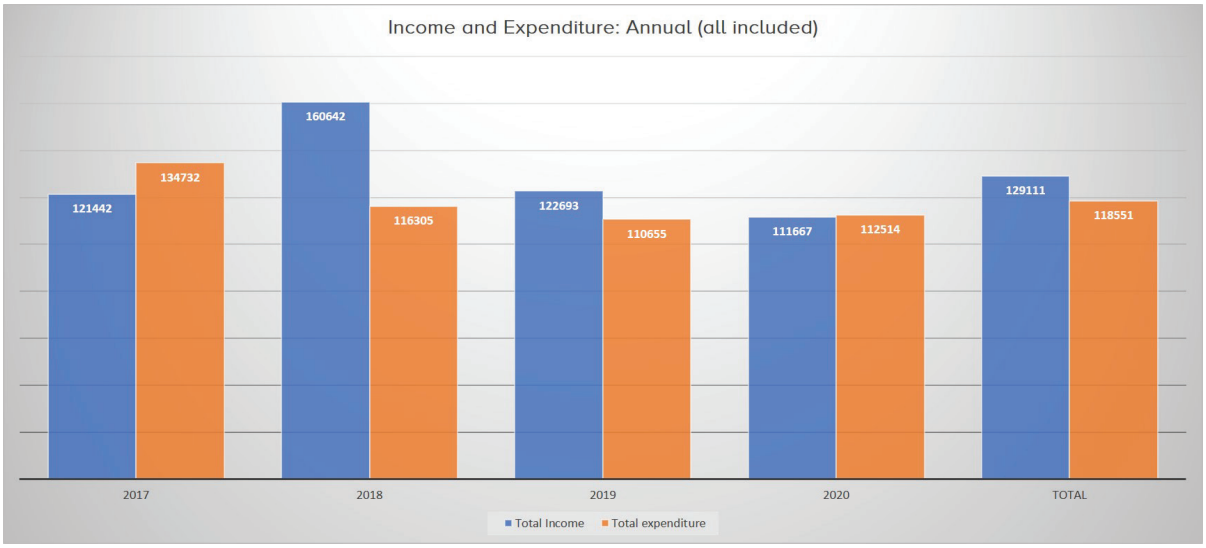
ICBAAR beneficiaries are of extreme poverty, especially during the rainy season and around late autumn for around **3 months on an average** more than **70%** of the HH experiences food shortage where they must **skip 1 or for many 2 meals per day**. The following graph shoes that they are literally spending what they are earning daily (living hand to mouth).

Average monthly income of the HH of beneficiary during baseline is **10759 BDT**. This includes all means of income (for many it is multiple, since the livelihoods are season dependent) like- Income from agriculture, aquaculture, poultry/livestock, from natural forest resources like honey, fishing and loans received.

Average monthly HH expense of beneficiaries during baseline is **9879 BDT**. This expense calculations include expense for food, cloths, education, treatment, household work, expenditure for the agricultural/fish/poultry and loan repayment.

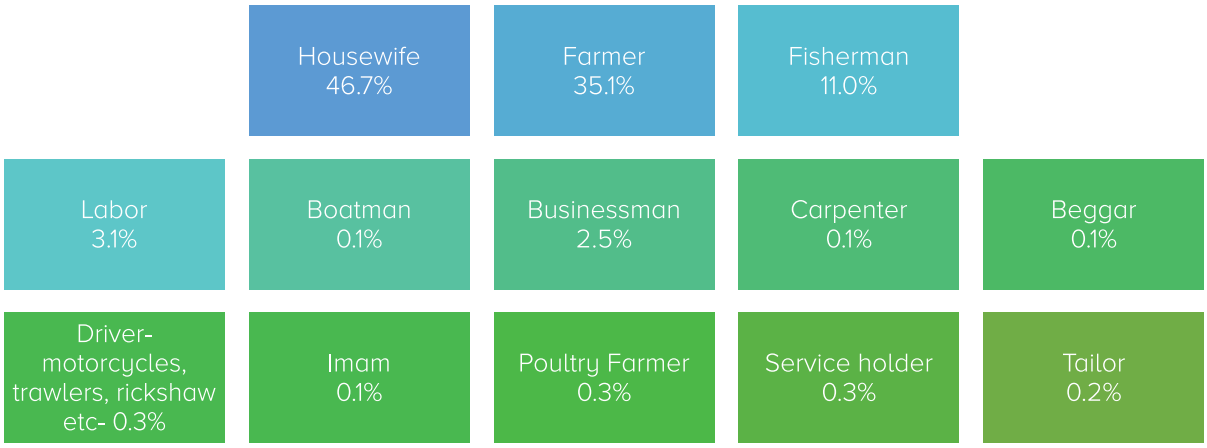
Considering the average number of HH, the daily expense per member of the HH is on an average 71.48 BDT (people living on less than $1.90 a day is considered below poverty line). The daily income available per member of the family is at approx. 80.29 BDT. Meaning the HH are living hand to mouth, making ends meet with whatever available.

Interesting finding- As previously expected, for beneficiaries selected in 2020, substantial income drop is recorded corresponding the COVID 19 crisis, demonstrating further vulnerability of the coastal people.



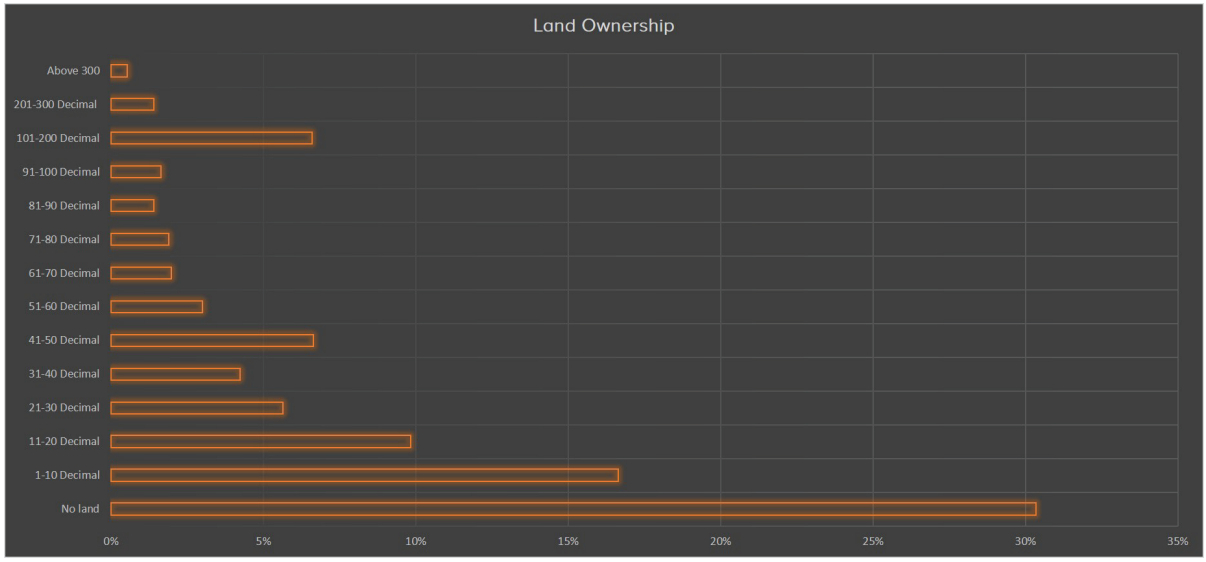
Beneficiary Occupation

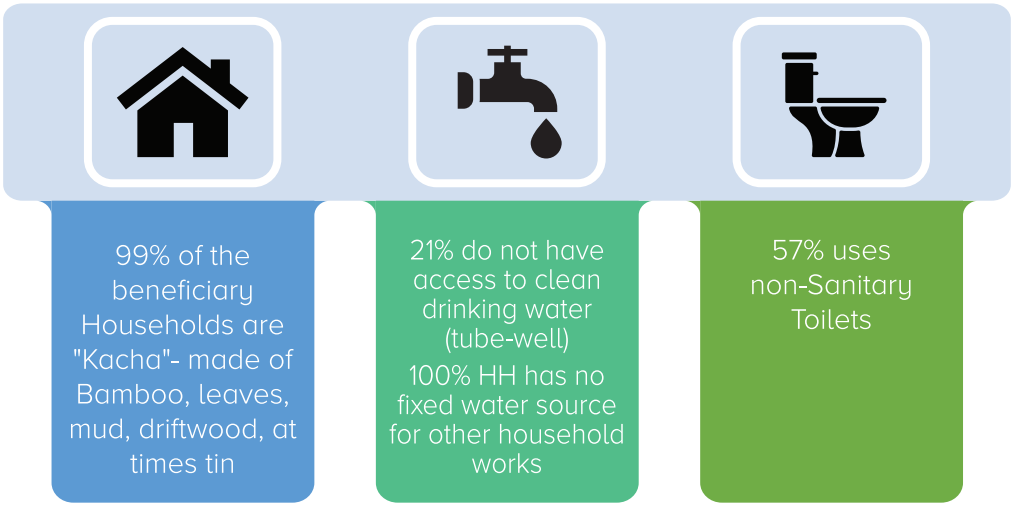
Considering the usual demography of only bread earner in a regular coastal HH, ICBAAR has introduced multiple livelihood intervention focusing the housewives. Female beneficiaries of ICBAAR are therefore visibly more empowered from their baseline condition. Now with her economic contribution for her family.



Baseline Living Conditions

Most of the ICBAAR beneficiaries owns no land or only homestead land. ICBAAR interventions were designed so the people with no land to call their own can have access to fellow or khash lands as lease for their livelihood purposes. Another method adopted by project is introduction of innovative livelihood interventions by making best usage of the homestead ground.





Concluding Remarks on Baseline findings in line with Relevancy of ICBAAR Interventions

Climate vulnerability and diversified intervention: ICBAAR interventions are diversified in nature to provide the vulnerable beneficiaries with as many opportunities at alternatives as possible. In the baseline data it was evident that the losses are multifaceted, ICBAAR interventions are each aim to address specific conditions of the beneficiaries. The project introduced interventions focusing housewives, interventions focusing migrants, interventions focusing homeless also at the same time exploring the beneficiary strength and available assets as well.

Income and use of limited land: ICBAAR interventions are designed to be low cost and requires less space to reproduce which relates to the small amount of land owned/leased/used by the beneficiary usually around his own home. Interventions related to vegetable productions like hanging vegetables, vegetables in sack, even interventions like bio-flock can be done in a small amount of land around the house.

Female empowerment and household solvency: Baseline study showed that most the beneficiary HH typically had one bread earner for 4/5 membered family. Out of all the beneficiary selected 47% beneficiary are housewives, ICBAAR intervention like 2FVD, Bio-flock, Homestead Vegetables, Homestead 3F are supporting these women to economically contribute to achieve solvency of the family. During baseline it was also noted that the HH of the female beneficiaries were slightly earning less than of men.

Forest dependency: ICBAAR interventions like 3F model directly focuses the needs of HH dependent on the forest for livelihood. Variety of output from the villages and the coordination between the beneficiary and Forest authority increases coordinated access to Government resources of the vulnerable community.

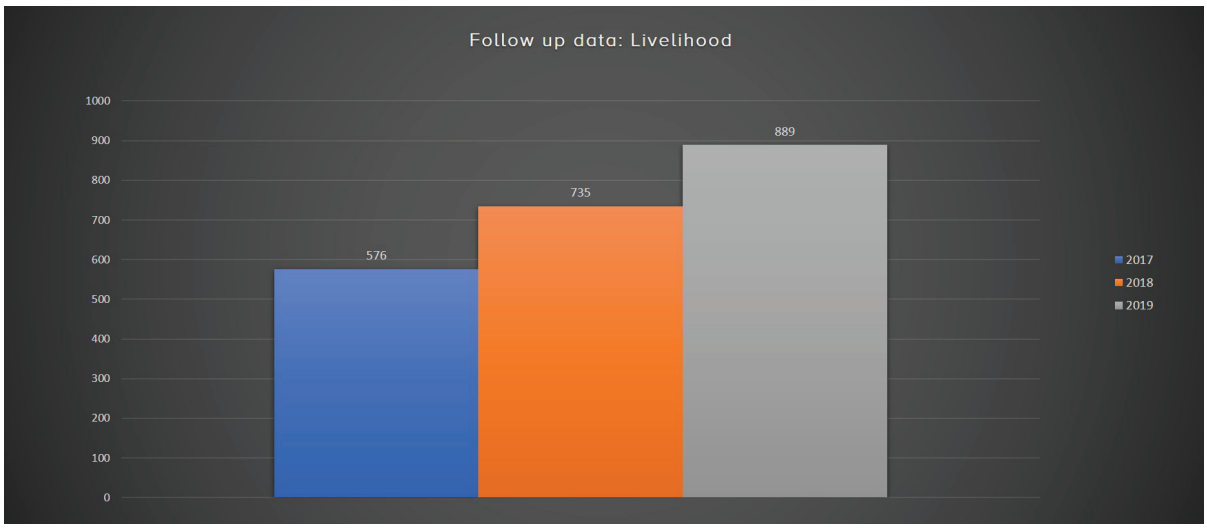
Migrant households and group interventions: ICBAAR designed interventions like cage culture, 3FV and other model village interventions focusing the need of the migrant families living in clusters or areas with extreme poverty. One such interventions are benefitting up to 30 families in many cases.

Effectiveness: Climate Resilient Livelihood

This section of the document will answer this question “Are the outputs by the project achieving desired outcomes”. According to the OECD/DAC, definition of effectiveness is as such: The extent to which the development intervention's objectives were achieved, or are expected to be achieved, taking into account their relevance.

Benefits: Climate Resilient Livelihood Interventions

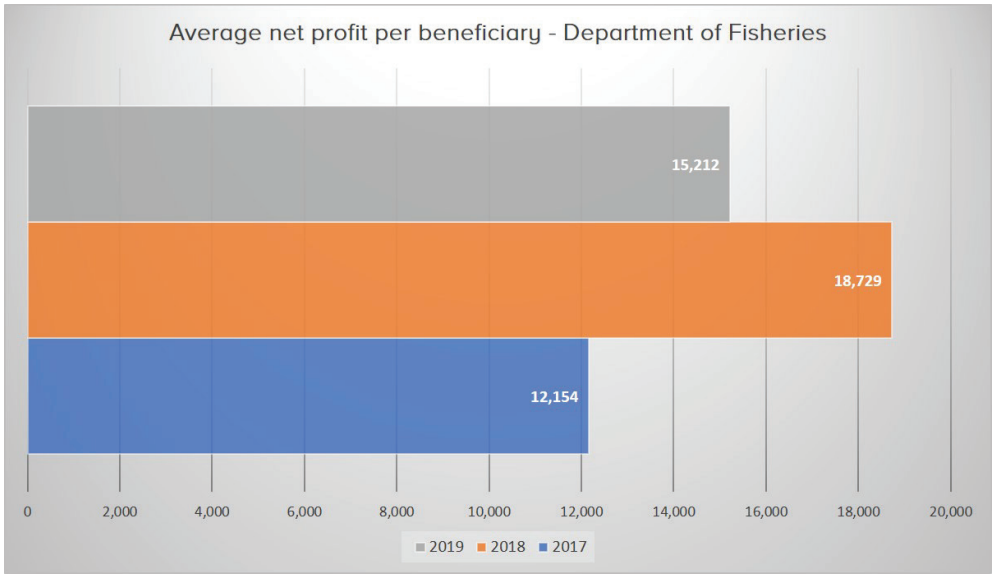
2200 (25%) beneficiaries out of the 8645 were followed up on to assess results of their livelihood interventions. This follow up has been conducted 1-year post interventions to assess the results of most interventions. For a few interventions like mixed fruit garden and 3F benefits takes longer to attain. Most of the intervention related to forestry takes longer to produce however, it gives off benefit for multiple years.



Department of Fisheries

Economic benefit to beneficiary

662 (26%) out of 2503 Total beneficiary HH of the Department of Fisheries were followed up on over the years and following findings recorded for an average investment of 11,845 BDT.



Interventions like Monosex Telapiya, Carp cultivation, Thai Pangush and Crab-fattening brought in maximum amount of profit amongst the variety of interventions provided. Beneficiaries shared their satisfaction with the fish production for the following reasons-

Monosex Tilapia

- High Production
- Profitable
- Familiar to Coastal area
- Market demand High
- Climate resilient,
- Easy to culture

Thai Pangas

- Low Cost, Easy to Culture and Familiar to Coastal area
- High Prodution
- Have Market demand
- Profitable for HH income

Carp Fish

- Market demand is high, reported most of the beneficiaries
- Taste is good
- Market price is high
- Profitable and increased income

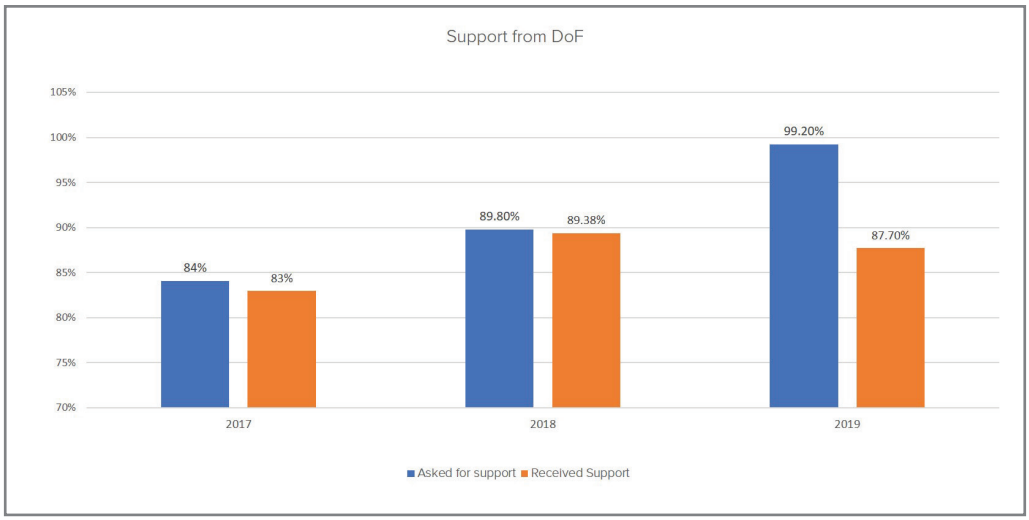
Crab Fattening

- More profitable and Pond used for round the year

Comparatively more feed required for mono sex Tilapia and Thai pangas is one of the challenges identified by beneficiaries. They also feel Thai pangas is not suitable for mixed culture. For comparatively newer interventions like crab fattening, demand for further training has been flagged. Number of Farmers planning on continuing the cultivation on the next years increased over the years from 90% to 100%

Benefit: Improved access to Government Services

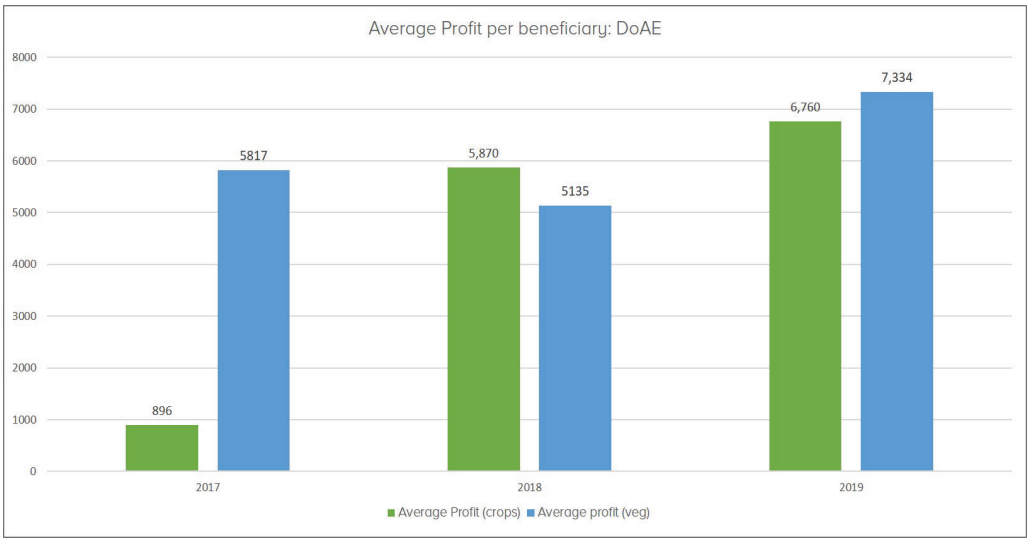
Trend of the support asked for and received during the course of at least one year of implementation shows the increase in interaction between the Department and the beneficiary. Beneficiaries now have established network with the relevant government official.



Department of Agricultural Extension

Economic benefit to beneficiary

505 (19%) of 2651 beneficiaries of the Department of Agricultural extension were followed up on over the years and following findings recorded for an average investment 5000- 9000 BDT for crops and vegetables.



T-Aman were reported to be a high yielding crop with major climate resilient benefits amongst the beneficiaries –

Saline tolerant (up to 8-12 ds/m for 3 weeks)	Resistant to abrupt flood	Survives in water logged condition	Heavy Wind tolerant
High yielding, 6-7 MT/Ha, where traditional variety yields 2.5-3.00 MT/Ha	Soil PH required value 4.5 to 7.5, saline soil PH <8.5	Drought resilient for 3-4 weeks	Short life span

Variety of interventions were designed to implement alternative methods of vegetable cultivation as per need and capacity of the beneficiary.

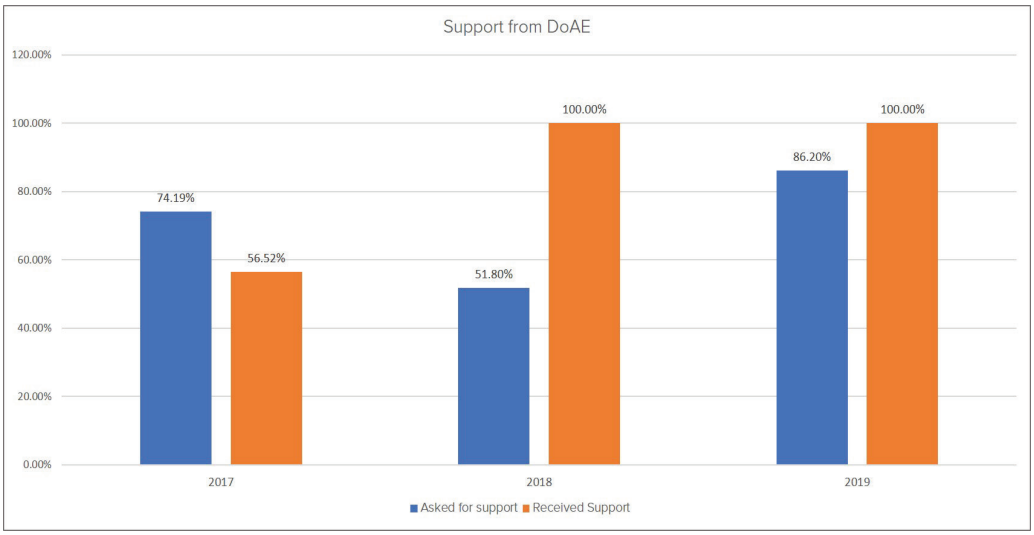
Number of Farmers planning on continuing the cultivation on the next years increased over the years from considerably.

Vegetables

- 3-Layer Vegetable
- Dike bed cropping
- Floating Vegetable Garden
- Homestead Vegetable
- Multi-layer or Stair veg.
- Suspension vegetable
- Vegetable in Sack

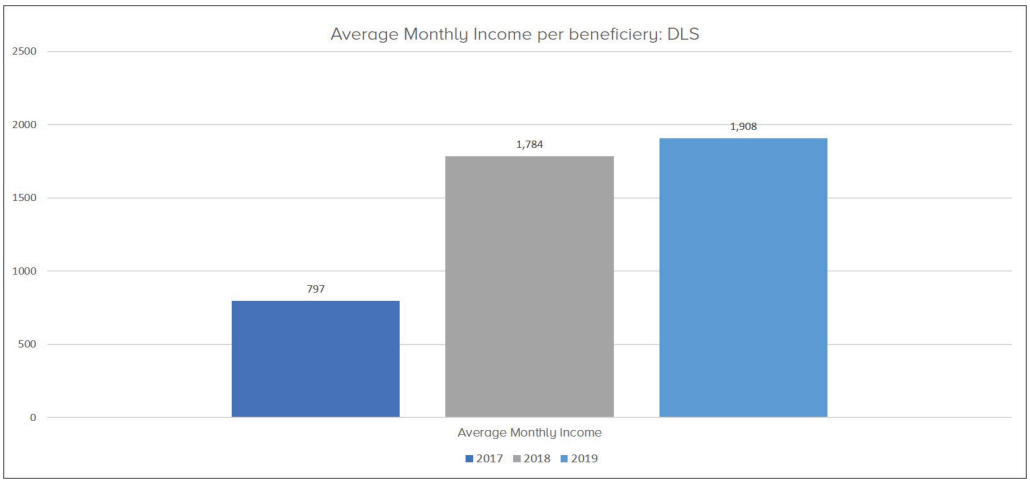
Benefit: Improved access to Government Services

Trend of the support asked for and received during the course of at least one year of implementation shows the increase in interaction between the Department and the beneficiary. Beneficiaries now have established network with the relevant government official. The following graph demonstrates improved services of the department as all those who asked for help did receive it.



Department of Livestock

862 (35%) of 2439 beneficiaries of the Department of Livestock were followed up on over the years and following findings recorded for an average investment 470 BDT per month.



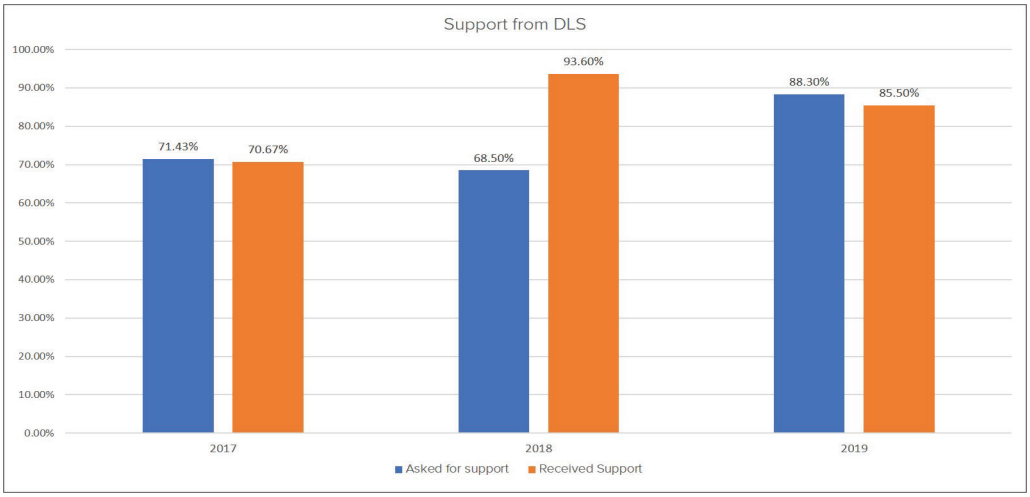
Duck and Turkey interventions generated positive results in livelihood options. The variety of Ducks, Goose and Turkey produced following outcomes. Moreover, it played an important role in food consumption and nutrition intake.

Duck/Goose

- Lays more eggs (280-300 per year) than the local variety (70-80 per year)
- Start laying within 5-7 months age
- Long notch uses searching food in the deep water
- Need less food than the local variety
- Producing 240 eggs every month from 8-10 ducks
- Source of nutrition for HH

Benefit: Improved access to Government Services

Trend of the support asked for and received during the course of at least one year of implementation shows the increase in interaction between the Department and the beneficiary. Beneficiaries now have established network with the relevant government official. Except for 1 or 2 upazillas all beneficiaries who asked for support received it.

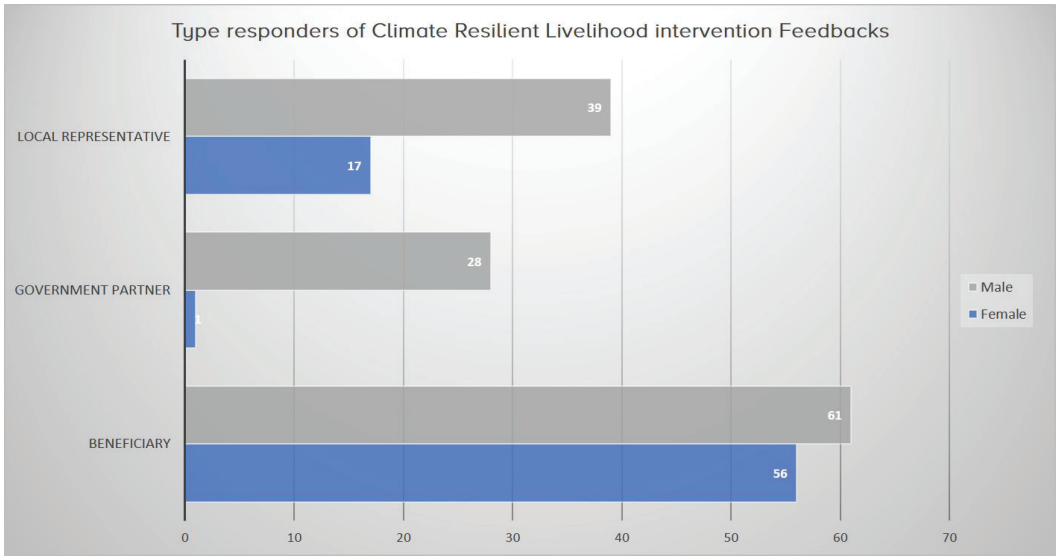


Beneficiary and Partner's Feedback

Following information has been extracted from a feedback survey of partners, local representatives, and beneficiaries of ICBAAR interventions. The survey was conducted in end of 2020, where feedback from all relevant partners of ICBAAR intervention, randomly selected beneficiaries and local representatives from 70% of all ICBAAR unions. The responders were asked if they agreed with certain changes brought through ICBAAR interventions, whether they were satisfied with the interventions and if they had any concerns. Initially these changes were identified through all staff brainstorming session. Therefore, the following feedbacks are an integrated response of ICBAAR beneficiaries, partners, local, staff and local representatives of the project sites.

Climate Resilient Livelihood

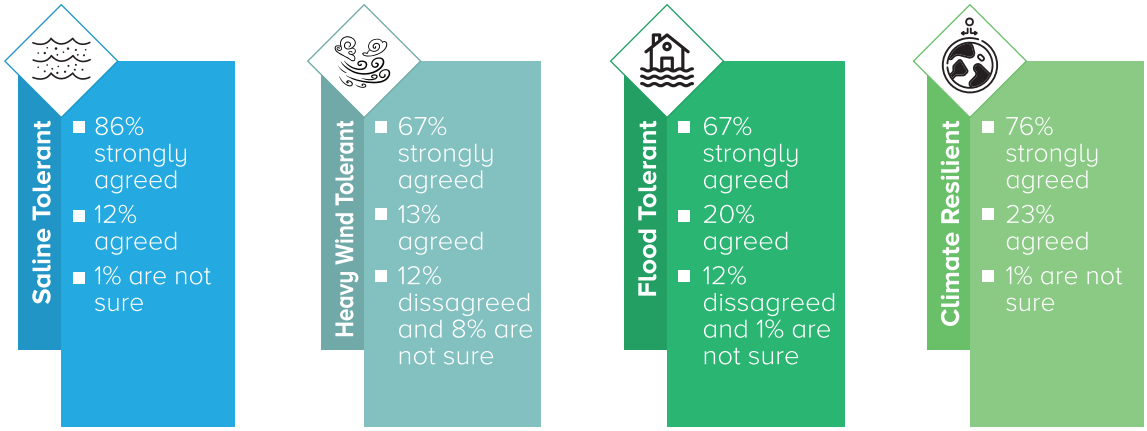
Total number of feedbacks collected on interventions related to climate resilient Livelihood interventions are 202 (128 male 74 female).



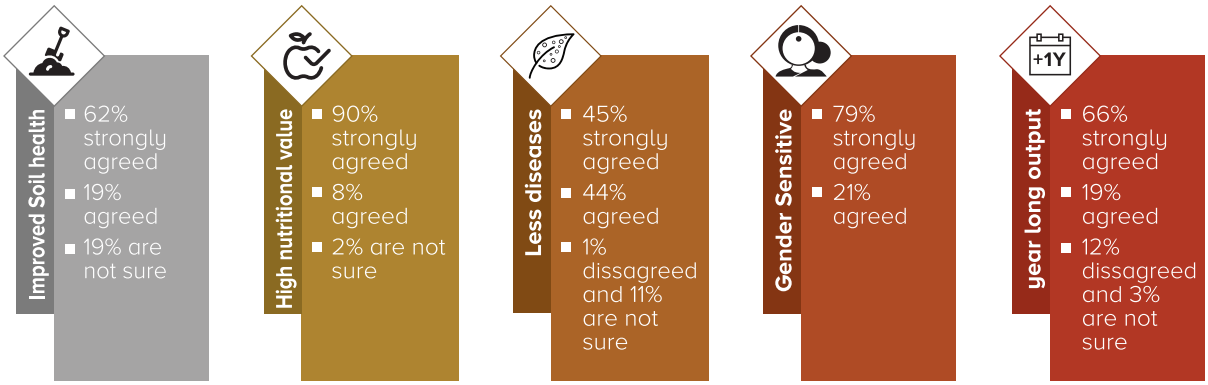
The changes identified for the interventions focuses on the following category:

- Climate resilience through ICBAAR interventions: Tolerance and absorption aspects of the interventions.
- Improved quality of production and life like increased yield and improved nutrition.
- Improved access to government Changes in relationship dynamics between community and relevant departments of government- like coordinated access to resources and improved government services.
- Impact in biodiversity and forest dependency.

Climate Resilience



Improved Quality



Improved Access to Government Livelihood related Services

Technology Transfer
- 60% strongly agreed
- 39% agreed
- 1% are not sure

Coordinated Access to Resources
- 61% strongly agreed
- 36% agreed
- 3% are not sure

Enhanced Government Capacity
- 68% strongly agreed
- 24% agreed
- 8% are not sure

Empowered and Involved Community
- 59% strongly agreed
- 40% agreed
- 1% are not sure

Fellow Land Use
- 76% strongly agreed
- 21% agreed
- 3% are not sure

Improved Government Services
- 69% strongly agreed
- 31% agreed

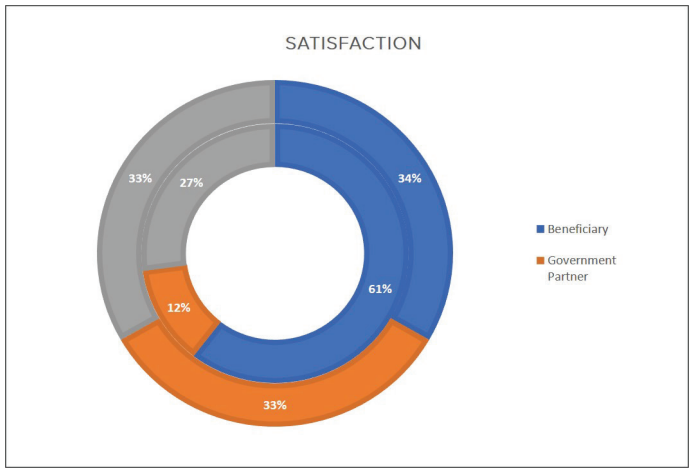
Biodiversity and Forest Dependency

Biodiversity Conservation
- 63% strongly agreed
- 29% agreed
- 9% are not sure

Reduced Forest Dependaency
- 75% strongly agreed
- 23% agreed
- 2% are not sure

Satisfaction

Partners, local representatives and beneficiaries of ICBAAR are all seemed to be in agreement of identified changes brought by project livelihood inerventions. Except for handfull of disagreement, in the areas of year long output and short duration of the livelihood productions, everyone is in strong agreement on the identified issues. Therefore it came as no surprise that 80% of the responders stated they were highly satisfied and 20% were satisfied with the project Interventions. In the graph, outer circle is of highly satisfied, inner circle is of satisfied responders. Apon asking the responders also identified 3F, 2FVD, Khaki Campbell duck and Sorjone culture as the best lievlihood interventions.



Sustainability

Relationship built between the beneficiaries and the relevant government department: people now know where to go

Government capacity enhancement in selecting climate resilient interventions

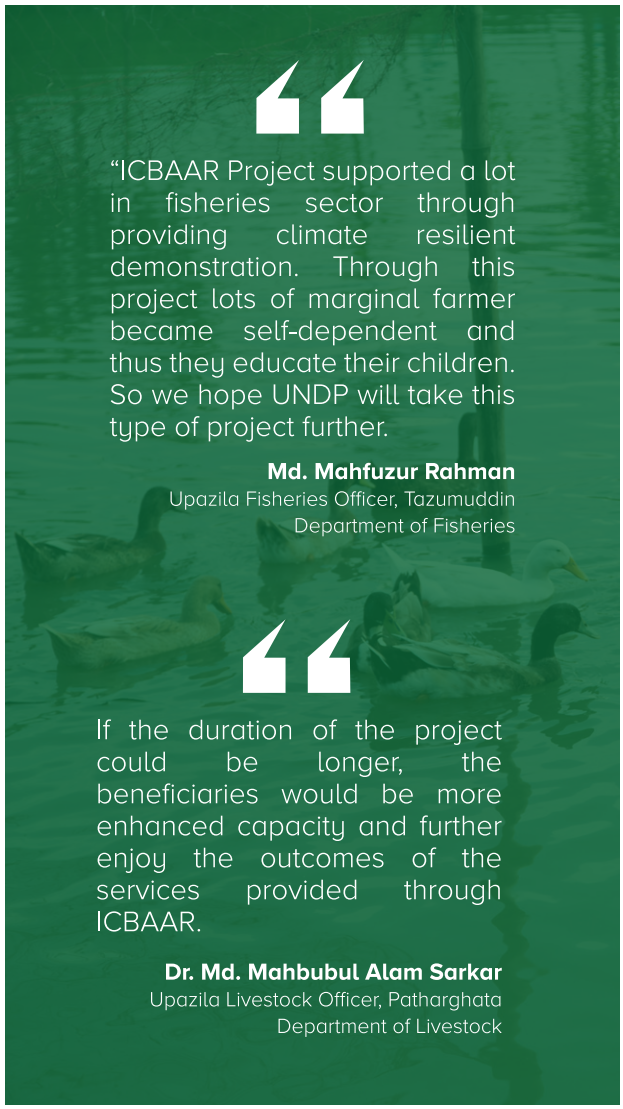
Manual on climate resilient livelihood interventions jointly developed with government departments

Concerns of the responders

- The soil salinity level increasing in the recent years due to climate change
- Increased high tide and surges in the recent years due to climate change
- Shortage of grazing land due to rise of water level
- In the year 2020, record number of heavy rainfalls reduced the amount of fertile land

Recommendations of the responders

- Most of the responders recommended time extension for the project. Some suggested the project be scaled up to other areas. They feel if the project were extended more poor people will be benefitted and therefore reduce overall vulnerability
- Extended training and longer demonstration period were also recommended for the beneficiaries to grow adequate expertise
- Responders felt multiple alternative forms of livelihood interventions per beneficiaries will be more beneficial to reducing vulnerability



"ICBAAR Project supported a lot in fisheries sector through providing climate resilient demonstration. Through this project lots of marginal farmer became self-dependent and thus they educate their children. So we hope UNDP will take this type of project further.

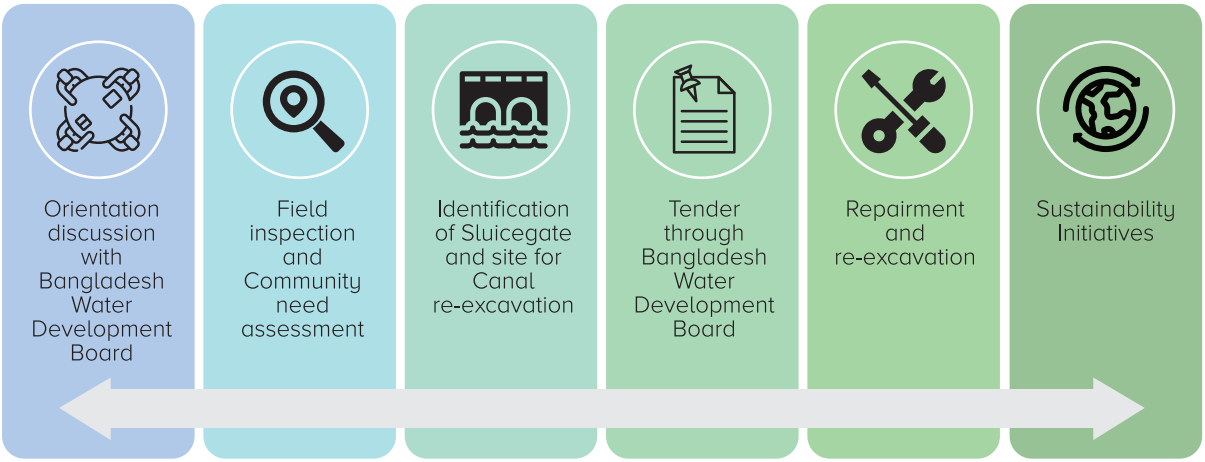
Md. Mahfuzur Rahman
Upazila Fisheries Officer, Tazumuddin
Department of Fisheries

If the duration of the project could be longer, the beneficiaries would be more enhanced capacity and further enjoy the outcomes of the services provided through ICBAAR.

Dr. Md. Mahbubul Alam Sarkar
Upazila Livestock Officer, Patharghata
Department of Livestock

Efficiency: Improved Drainage

Methodology



Baseline Condition and Relevancy of Interventions

Earthen coastal embankments have been built along the Bangladesh coast since the 1960s to protect against tidal waves and storm surges. maintained by the Bangladesh Water Development Board (BWDB) of the Ministry of Water Resources (MoWR).

Damaged sluice gates and canal sedimentation inside the embankment is causing inland flooding is a severe problem in some areas.

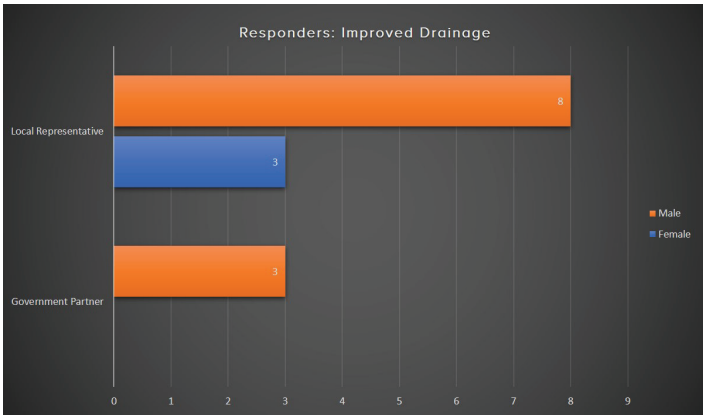
Reduces local resilience through damage and loss of livelihood assets including salination of land as well as increased health risks from stagnant water.

"Khalashi" position in the BWDB, in charge of management of sluicegate have been abolished. Sluice gate management have been controlled by local political representatives.

Effectiveness: Improved Drainage

Sluicegate repairment and canal re-excavation took place in upazillas of Bhola. Approximately 2 Lac coastal climate vulnerable population is benefiting from the improved drainage facilities of along 50 km along embankment.

Following feedbacks were collected from government partners (Bangladesh Water Board and Department of Fisheries) and local representatives of the project sites.

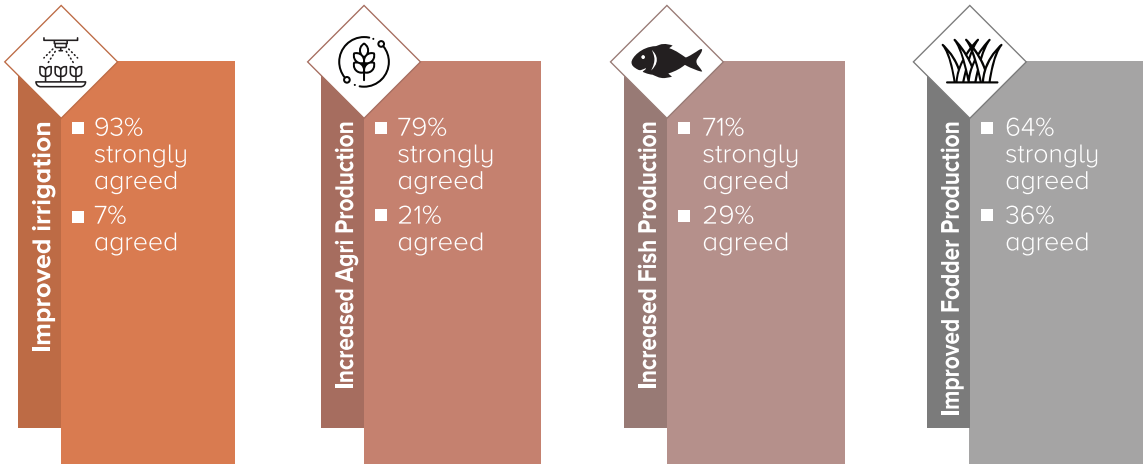


The changes identified for the interventions focuses on the following category:

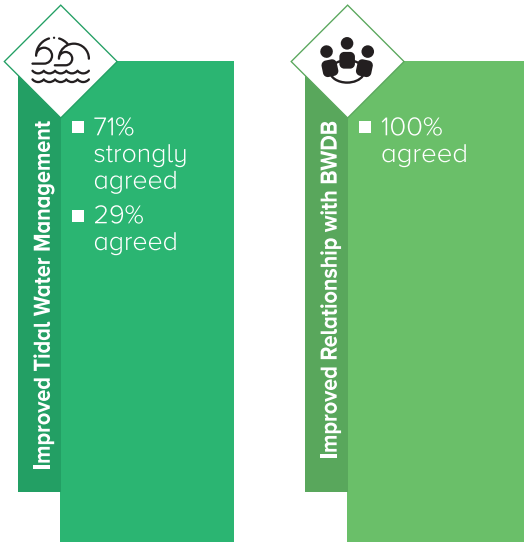
- Changes in the local community due to improved drainage – like reduced water logging, reduced soil erosion etc.
- Changes in the local livelihood measures in the community due to improved drainage- like improved irrigation, better agricultural and fisheries production etc.
- Improved access to government Changes in relationship dynamics between community and relevant departments of government- like coordinated management of tides and networks established
- Impact in biodiversity and Eco system

Changes in locality

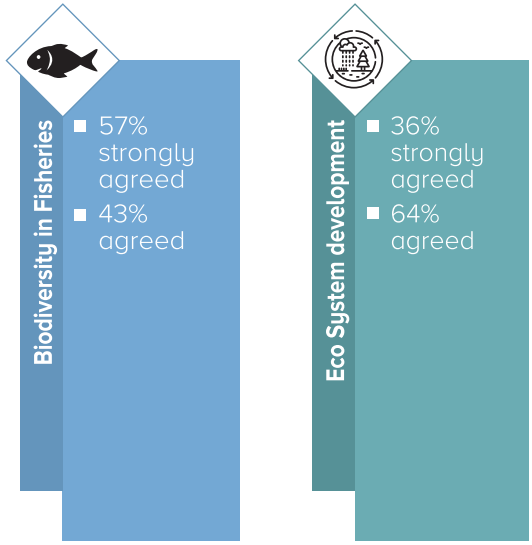
Changes in livelihood and production



Improved Access to Government services



Biodiversity and Ecosystem

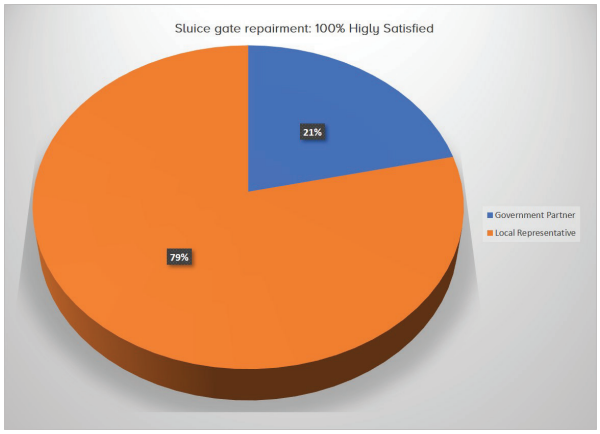


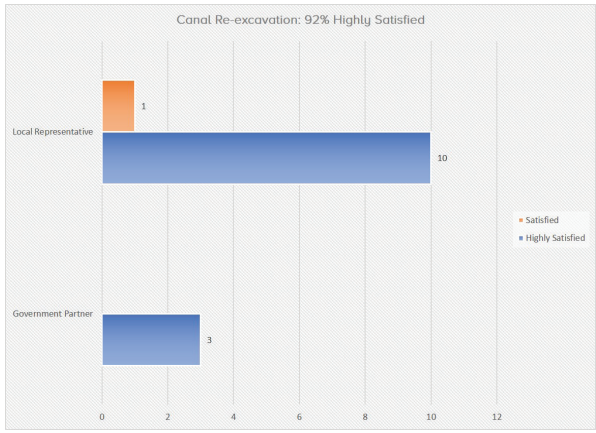
Recommendations of the responders

- Time extension and scaling up of the project was recommended
- Further repairment of water barrage required

Satisfaction

Partners and local representatives expressed their satisfaction on these very relevant interventions for the coastal communities. 100% responders were highly satisfied with the sluicegate repairments and 92% highly satisfied with canal excavation.





Sustainability

Reformed and partially revived sluicegate management committee supervised by Bangladesh Water Development Board where local community representatives are key members

Plantation along the banks of Canal re-excavation

Efficiency: Climate Hazard Preparedness

Methodology: Killa, Raised Tube well, and PSF repairing

In field need assessment for identification of Killa sites and tube wells in need of water proofing/ PSF repairing

Identification and finalization of Killa sites and Raised tube wells/ PSF repairing

Construction of Killa and raising of tube well/ repairing PSF

Methodology: CPP

Training manual development in discussion with Department of Disaster Management

Equipment need assessment

Equipment provided

Refreshers trainings provided

Baseline Condition and Relevancy

Scarcity of shelters in comparison to the population. In addition, their livestock have no where to go during the natural disasters

Loss of huge number of livestock occurred during previous disasters

Lack of adequate livestock shelters also renders women particularly vulnerable as they generally take responsibility for ensuring the safety of livestock

Unavailability of Fresh water during natural disasters specially during flood

Massive disasters during past cyclones and other climate hazards due to inadequate early warning and rescue system

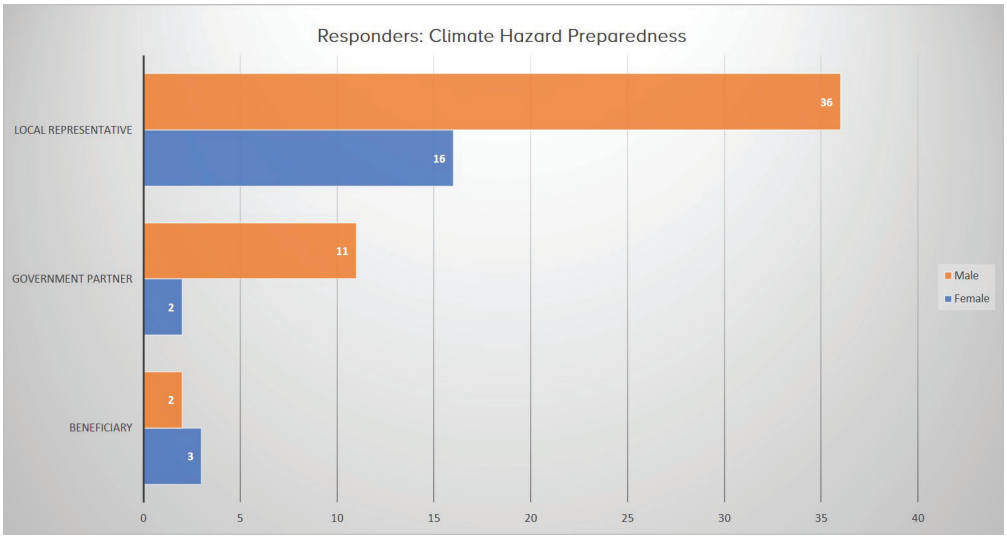
Women are collecting fresh drinking water from PSF

Effectiveness: Climate Hazard Preparedness

Beneficiary and Partner's Feedback

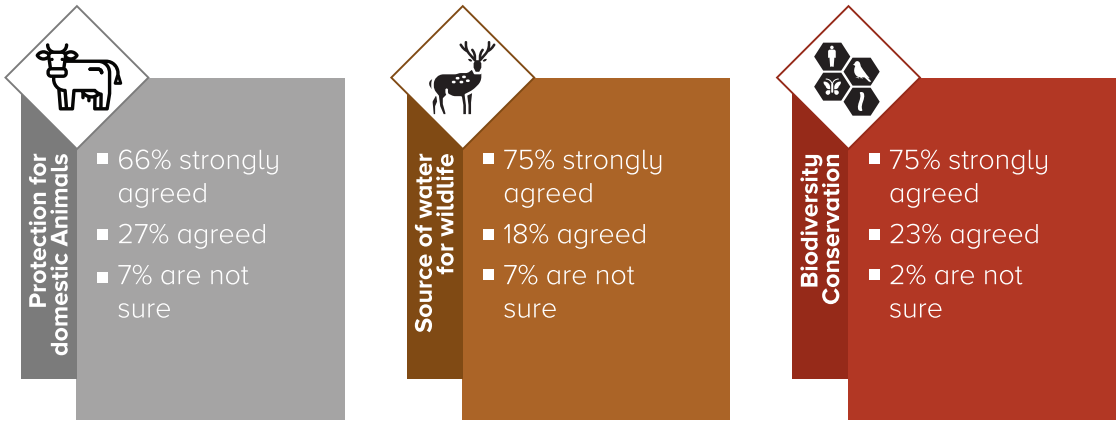
Multifaceted interventions were designed to strengthen the capacity of the coastal population to prepare for climate hazards.

- Killa Construction for protection of livestock
- Tube well raising or PSF repairing for availability of fresh water during water-logged hazards
- CPP training and equipment for better pre hazard announcement and overall capacity enhancement

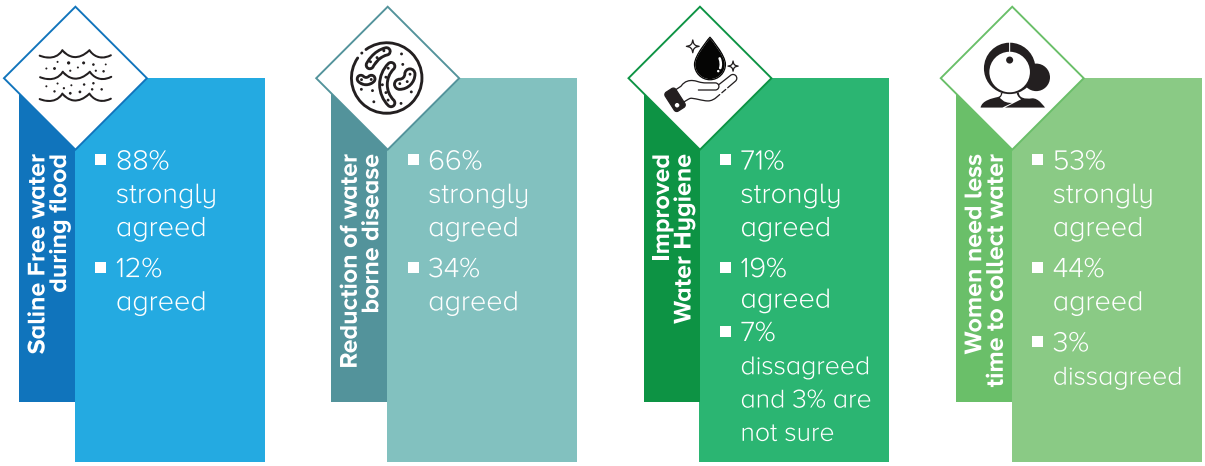


Therefore, the responders of this section include CPP volunteers (beneficiaries), Government Partners (Department of Disaster Management) and local representatives

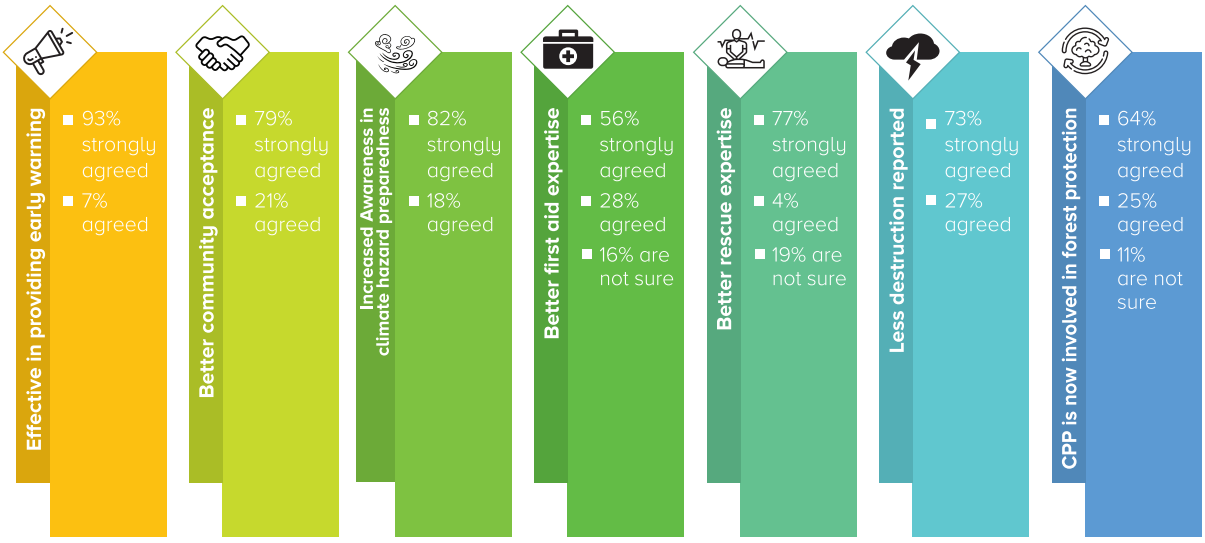
Killa



Raised Tube well/ PSF Repairing



Raised Tube well/ PSF Repairing



Concerns of the responders

- More sources of Fresh Water Required during flood
- Not enough Killas in the coastal region still
- Overall increase in number of deep tube well and regular tube wells were requested
- CPP needs more support in providing refreshers training and rescue equipment

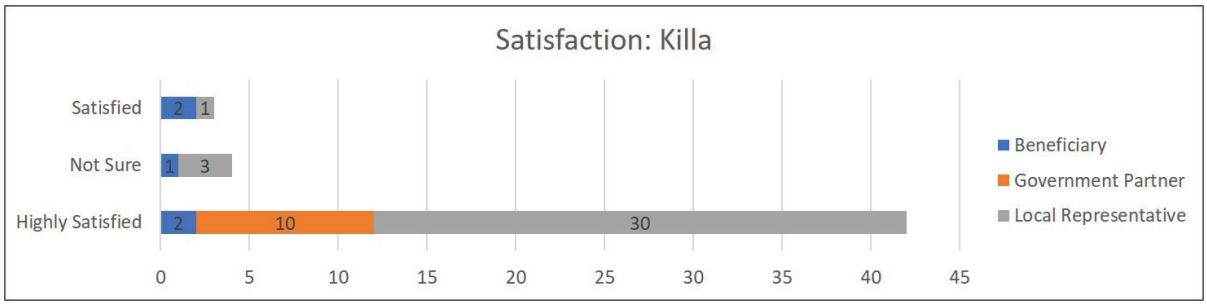
Recommendations of the responders

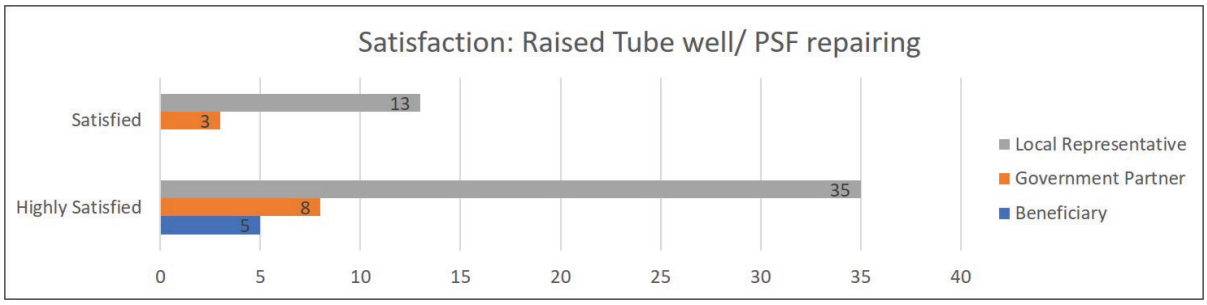
- Most of the responders recommended time extension and scaling up for the project. Some suggested the project be scaled up to other areas. They feel if the project were extended more similar interventions can be undertaken
- Responders requested government undertakes similar projects with increased support for CPP and Killas

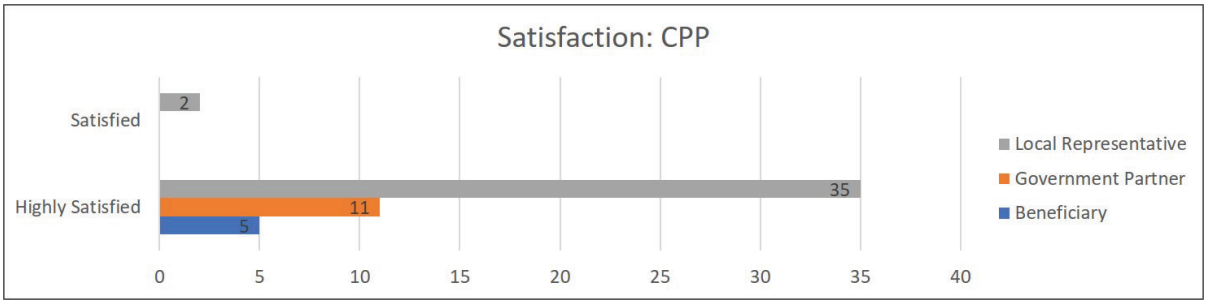
Satisfaction

Most of the responders were very satisfied with the interventions

- 85% of the responders highly satisfied with Killas
- 75% of the responders highly satisfied with Raised tube well and PSF repairing
- 96% of the responders highly satisfied with CPP







Sustainability

Killa Management Manual with detailed roles and responsibilities of the relevant stakeholders under the supervision of CMC

Maximum level of waterproofing of tube wells and PSF conducted to ensure safe water during the ever-rising water level

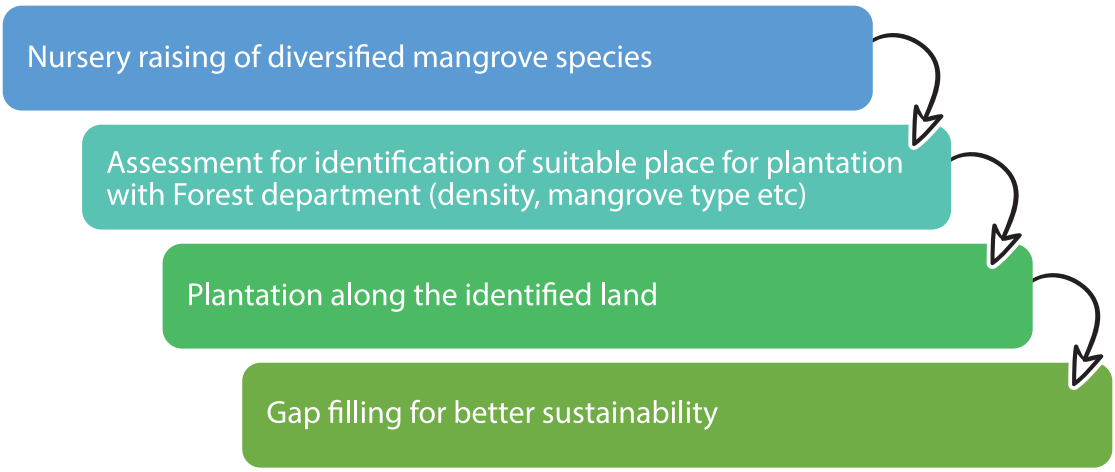
ICBARR developed training module emphasizing the roles of CPPs during disaster and also regarding roles of coastal forests against cyclone and storm surges as per agreement signed with Department of Disaster management.

> CPP got highly benefited from the project of ICBAAR. Training and equipment were very useful during climate hazard, more inclusive involvement of CPP recommended

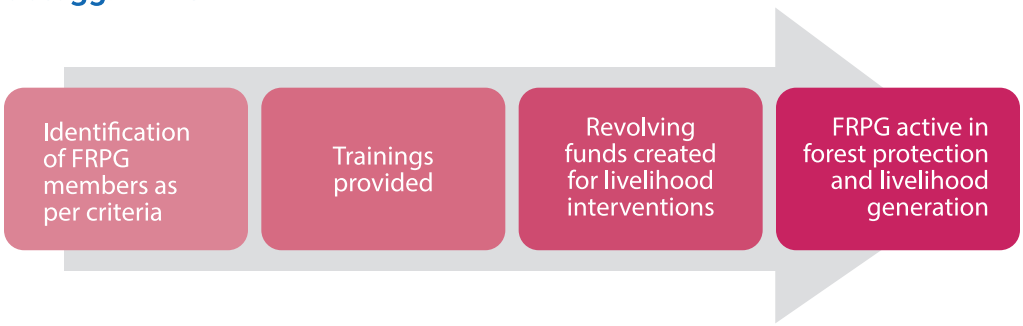
Md. Abdur Rashid
ADD, Disaster Management
Galachipa, Patuakhali

Efficiency: Greenbelt Management

Methodology: Enrichment Plantation



Methodology: FRPG



Baseline Condition and Relevancy

Gaps continue to grow even in a mature forest if no diversification /enrichment planting has taken place

Clearing of Keora and Baen for agricultural activities or in search for fuel wood is a huge threat to the forest

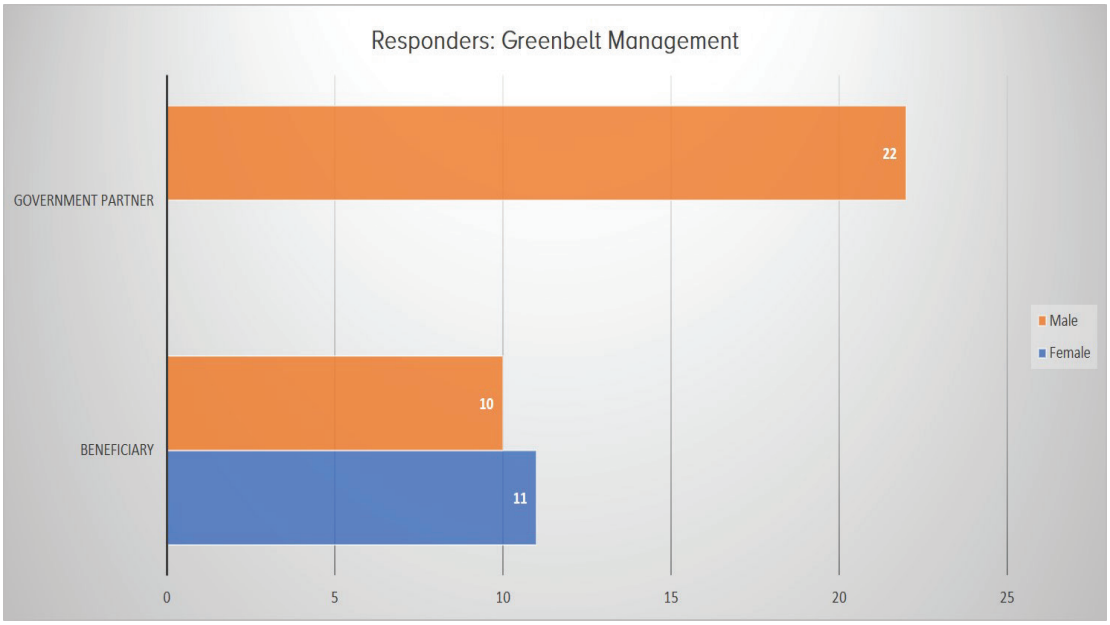
Thinning of older Keora trees can be used for fuel. if enrichment planting is done, other mangrove species start to offer more benefits

Effectiveness: Greenbelt Management

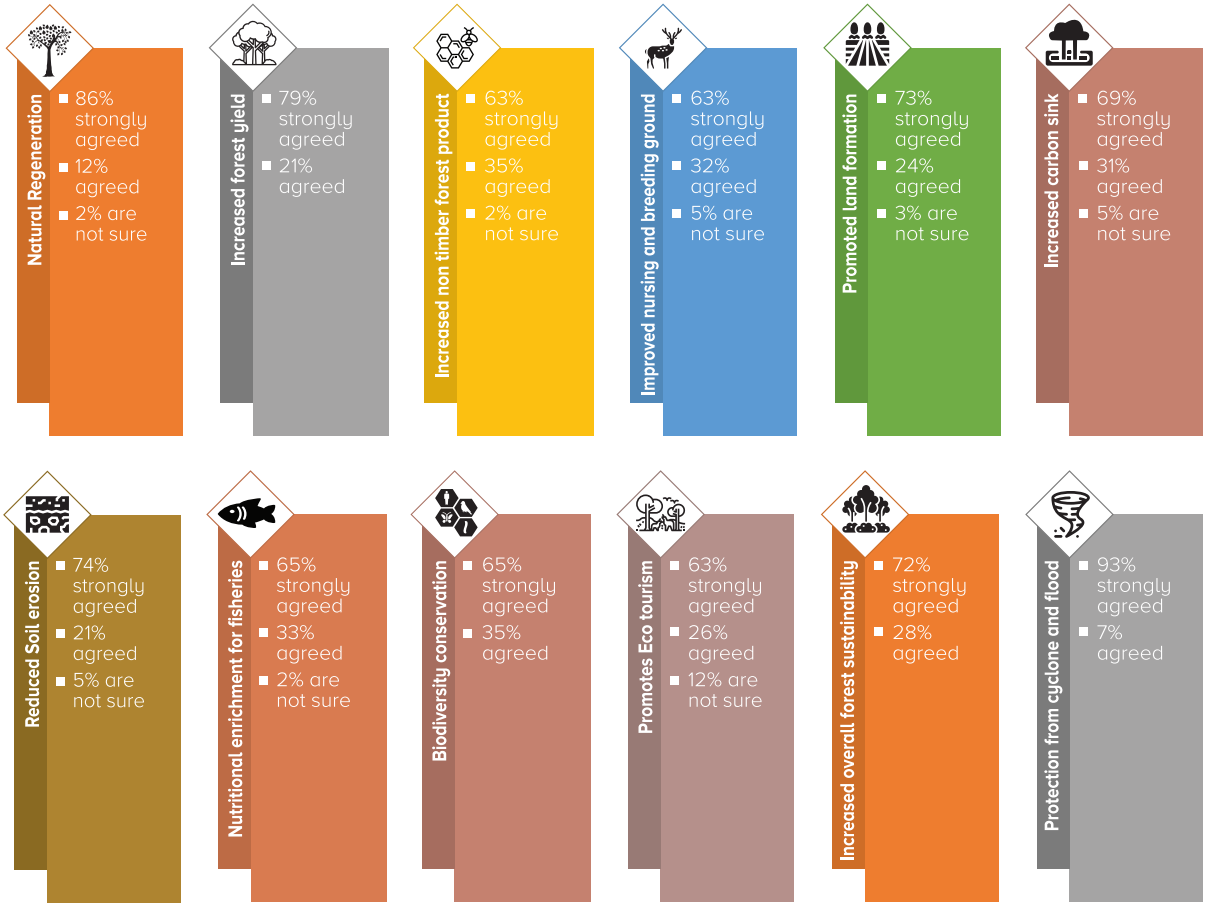
Two different types of interventions of ICBAAR contributed to greenbelt management

- Diversified Enrichment plantation of mangroves along the greenbelt
- Formation of Forest Resource Protection Groups to ensure community involvement in forest protection

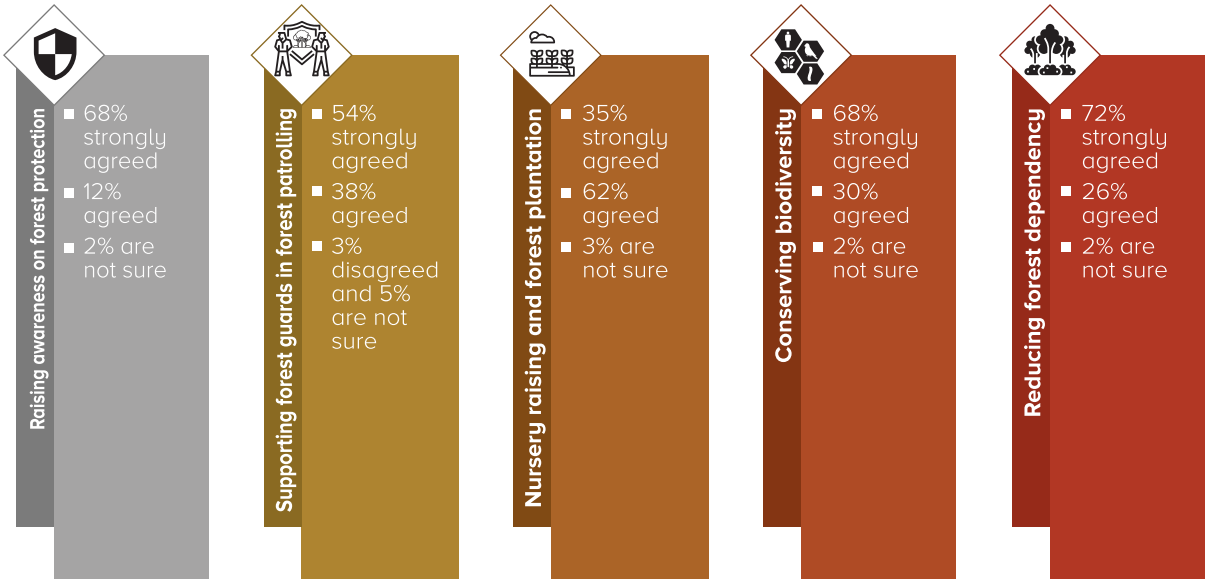
Therefore, the responders of this section include FRPG (beneficiaries), Government Partners (Forest Department)

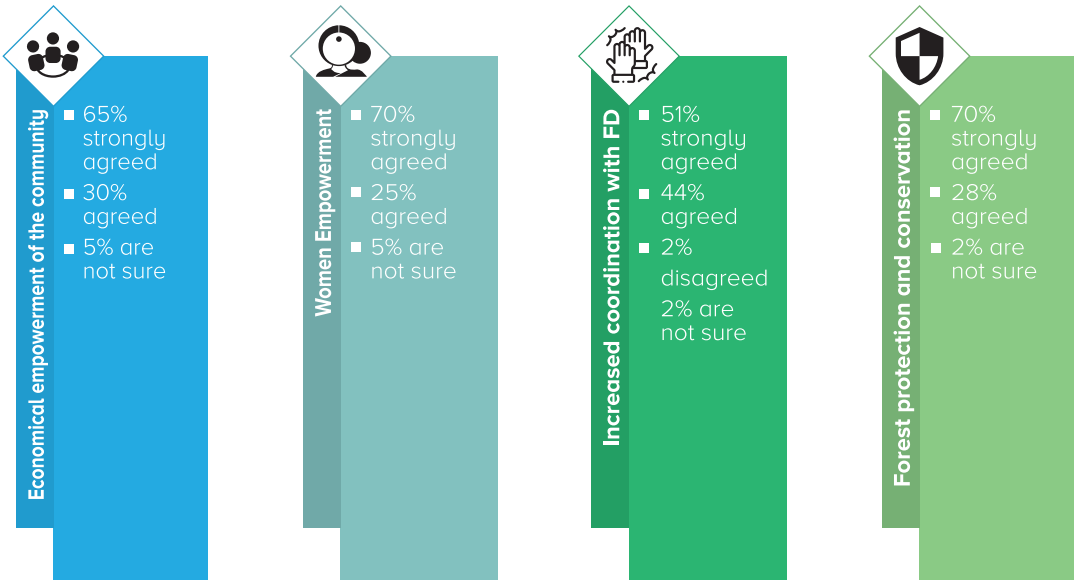


Diversified Enrichment Plantation



FRPG





Concerns of the responders

- More Afforestation and reforestation initiatives required for sustainable greenbelt management
- Guards needed in 3F models in the forest land
- Some recently formed FRPGs did not have adequate time to develop relationship with Forest department and expertise to do livelihood interventions/forest protections

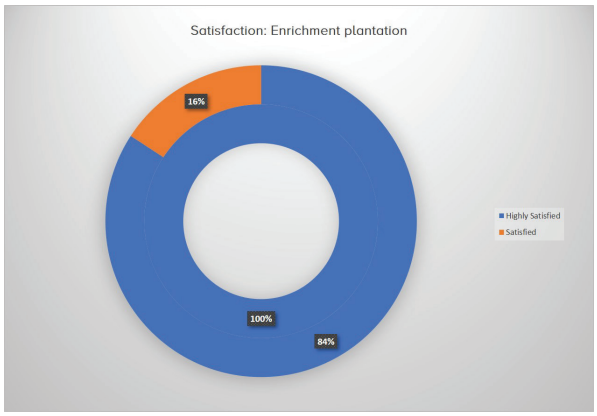
Recommendations of the responders

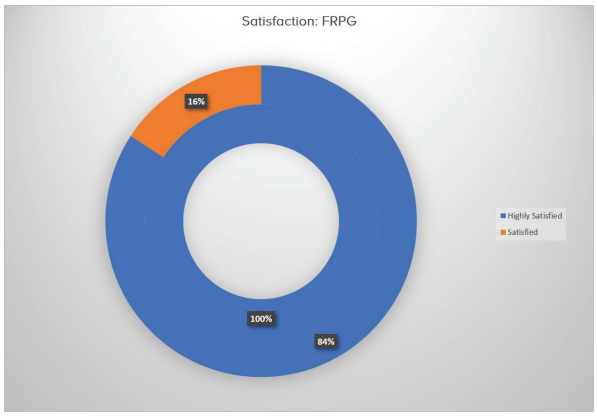
- FRPG members feel they would have acquired adequate expertise if the project were to be extended for 5 more years
- More initiatives of afforestation and reforestation recommended by the Forest Department

Satisfaction

Most of the responders were very satisfied with the interventions

- 92% of the responders highly satisfied with Enrichment plantation
- 92% of the responders highly satisfied with FRPG





In the graph Outer Circle is Government partners and Inner circle are the Beneficiaries

Sustainability

MoU between FRPG and Forest Department with involvement of CMC

Mangrove nursery and plantation manual as a part of knowledge management of diversified mangrove forest

Effectiveness: Contribution to Government Goals

Project results are contributing to multiple Sustainable Development Goals (SDGs)

Reducing Vulnerability

Enhancing Government Capacity

Climate Resilient Livelihood support for improved economic condition of the vulnerable HH of the Coastal Zone

Enhanced Greenbelt management through diversified enrichment, gap filling and establishing community ownership on forest resource protection

Improved drainage to reduce water logging and improve conditions of agricultural and fisheries production

Support in preparation for climate hazards through building Killas, raising tube wells and supporting CPP with equipment and training

 **End Poverty in all its Forms Everywhere**	• 8600 HH poor HH were provided with livelihood support that they are economically benefitting from (living below $1.90per day) • Concentrated support for migrant cluster villages of extremely poor • Group livelihood interventions and savings introduced
 **End hunger, achieve food security and improved nutrition and promote sustainable agriculture**	• Livelihood supported HH are benefitting from better food security, 70% HH were experiencing food shortage previously • Apart from, diversified agricultural interventions introduced sluice gate repairment provided better agricultural conditions for many HH
 **Achieve gender equality and empower all women and girls**	• 52% of the beneficiaries of the livelihood intervention are female. 49.5% of the total beneficiaries used to be housewives previously are now making economic contribution to their family. Female FRPG members have access to savings and platform for forest protection. • Raised tube-wells made fresh water accessible during flood
 **Conserve and sustainably use the oceans, seas and marine resources for sustainable development**	• ICBAAR provided fisheries livelihood support to 2503 HH though Department of Fisheries (DoF), also Contributed to Capacity enhancement and improvement of services of DoF • Nutritional enrichment and Biodiversity of fishes conserved through improved drainage system and greenbelt management initiatives
 **Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification and halt and reverse land degradation and halt biodiversity loss**	• 650 Ha of Enrichment plantation of 12 different diversified mangrove species, which as of 2018 report has a very high survival rate • 20 Forest Resource Protection groups and 22% of forest dependent beneficiaries were provided alternative livelihood means, FRPG is also assisting in Forest protection
 **Strengthen the means of implementation and revitalize the global partnership for sustainable development**	• ICBAAR intervention were provided through building government partnership with relevant Departments. Thus, contributing to capacity building and improved access to services • ICBAAR enriched inter institutional coordination in regard to climate hazard and greenbelt management

Country and Project Objectives

- Reducing Vulnerability: Over the last 30 years, Bangladesh has undergone two paradigm shifts in its approach to climate policy: the first from disaster response and relief to policy on disaster risk reduction (DRR) and preparedness in 2003, and the second from disaster risk reduction to climate adaptation in 2008. From 2008, climate change adaptation became integrated in policy. This shift – driven by a series of international events and weather disasters – pushed forward the development of the 2009 Bangladesh Climate Change Strategy and Action Plan (BCCSAP) and financing mechanisms through the Climate Change Trust Act in 2010: the Bangladesh Climate Change Trust Fund (BCCTF) (sustained by the country's budget), and the Bangladesh Climate Change Resilience Fund (BCCRF) (aggregating external donor funds). Both of these targeted vulnerable groups and sectors. In line with country strategy ICBAAR project approach is tackling climate vulnerability for a sustainable climate change adaptation. Project interventions economically strengthened over 8600 HH, also provided better livelihood many more HH through improved drainage system.

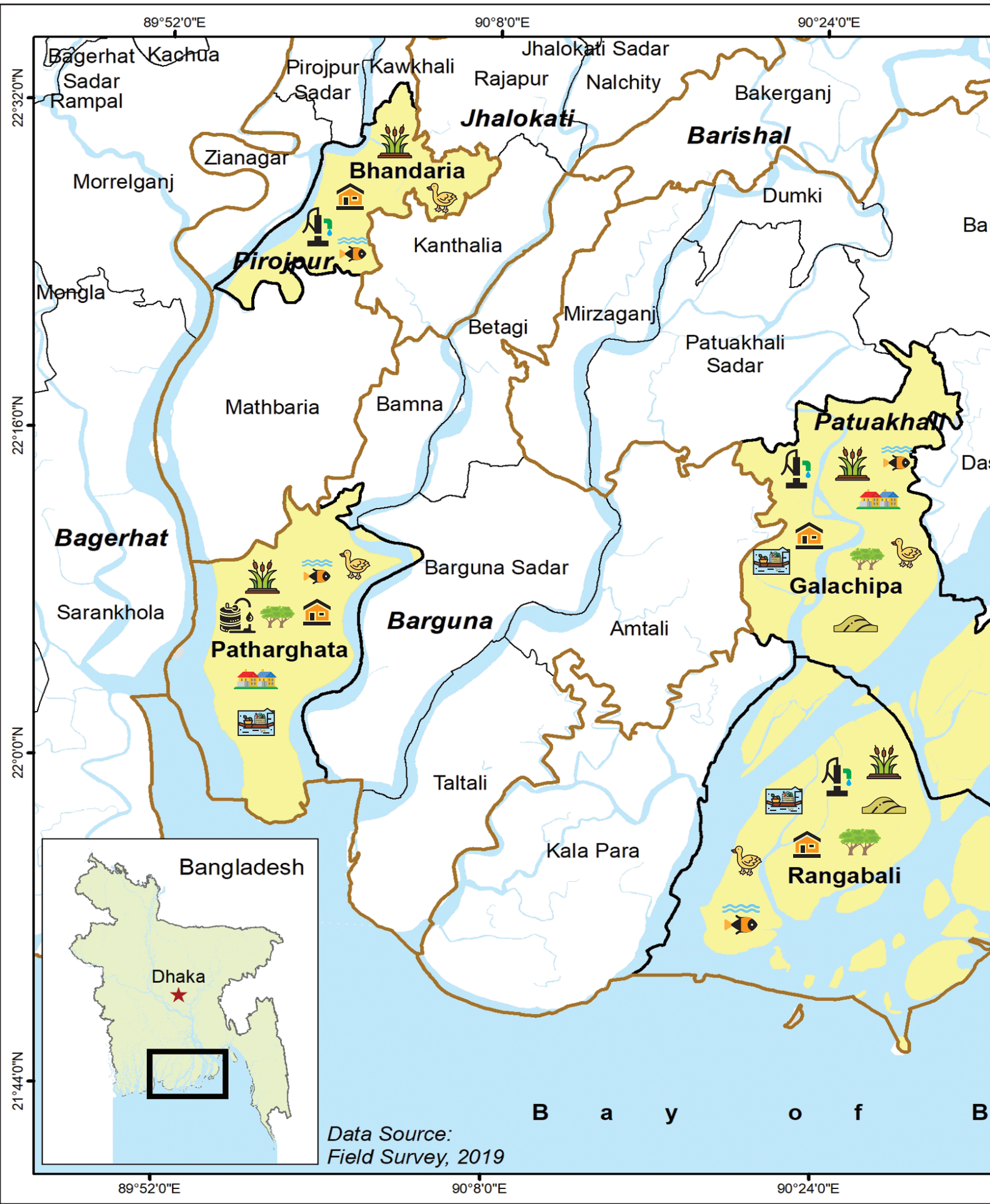
- Enhancing Government Capacity: During the last decade, policy efforts pushed to mainstream climate change adaptation across sectors with new paradigms and projects to respond to short-, medium-, and long-term effects of climate change, knowledge generation and building institutional capacities and implementation of climate initiatives. ICBAAR project strategy involved multiple government departments in the whole planning and implementation process. The government partners involvement throughout the planning and implementation process provided platforms for communities to build better relationships

with relevant department. Over the years the improvement in communication and overall access to service is evident in the follow-up data and the feedback survey.

- Contribution to Long term Government Goals: More recently, since 2018, the government is putting efforts into forward looking actions with the Delta Plan 2100, a long-term strategy aiming to achieve a safe, climate resilient and prosperous Delta by 2100, ensuring water and food security, economic growth and environmental sustainability. Both Bangladesh NDC and the Delta Plan refer to ecosystem-based strategies as an adaptation strategy, setting the scene for further work on mainstreaming NBS and greenbelts into actions at a scale bringing climate resilient economic development to the coastal areas of Bangladesh. Highly ambitious goals such as these are not achieved in a short duration, the main aim of project such as ICBAAR is to get the wheel of change moving. More capable and responsive Government counterpart, involved community, better preparedness for climate hazard and overall strengthened coastal communities are signs of the wheels turning.

Conclusive Remarks

- Characteristics of climate change, such as uncertainty, non-linearity of climate change patters, and long-time horizons, pose challenges for monitoring and evaluating the project contributions. To contend with these characteristics and to ensure continuous learning, adaptation programme design, management and evaluation methods must be open, flexible, and adapted to the changing context. Due to diverse and complex nature of the project that was designed to address specific issues of the remotest coastal islands, ICBAAR has applied flexible (in response to need) methodologies that will ensure sustainability through bringing visible changes in how Government partners are conducting day to day business. The main aim of ICBAAR in this context was to make noticeable contributions to turning the wheel of change, which the project succeeded in doing evident in the above analysis.
- The methodologies of joint implementation through government partners are time consuming and therefore also more expensive than that of direct service. However, this methodology has proven to be indispensable in ensuring sustainability and mutual growth of partner's capacity. ICBAAR project sites are in the remotest area of the country, where government services are scarce due to limited resources and manpower. All the relevant government department has expressed their gratitude towards ICBAAR for enabling a platform of communication between the coastal population and ensuring that the Government services reached the remotest of coastal islands. ICBAAR Interventions have provided opportunities of sharing knowledge and transferring technologies between the relevant stakeholders specifically suitable for Bangladesh coastal landscape.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Barishal
Zianagar
Morrelganj
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Patharghata
Taltali
Kala Para
Rangabali
Bangladesh
Dhaka
B a y o f B
Data Source:
Field Survey, 2019

Working Area of ICBAAR Programme

ICBAAR Programme

Ministry of Environment, Forest and Climate Change, with technical and financial support from UNDP and Global Environment Facility (GEF), is implementing the 'Integrating Community-based Adaptation into Afforestation and Reforestation Programmes (ICBAAR)' in five highly climate vulnerable coastal districts of Bangladesh. The objective of the Programme is to reduce vulnerability of coastal communities to the adverse impact of climate change through participatory planning, community-based management and diversification of afforestation and reforestation.

Programme Components

- Increase resilience of local communities through diversification of livelihood and enhancing species diversification in coastal greenbelt.
- Strengthen community involvement in, and ownership of forestry-based adaptation and climate risk reduction activities.
- Protect communal assets from extreme climate events through effective early warning and disaster risk reduction.

Implementing Partners

Bangladesh Forest Department, Department of Agriculture Extension, Department of Fisheries, Department of Livestock, Bangladesh Water Development Board, Bangladesh Forest Research Institute, Department of Disaster Management, Ministry of Land and NGO.

Integrating Community-based Adaptation into Afforestation and Reforestation (ICBAAR) Programmes in Bangladesh
Bangladesh Forest Department
Ministry of Environment, Forest & Climate Change

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